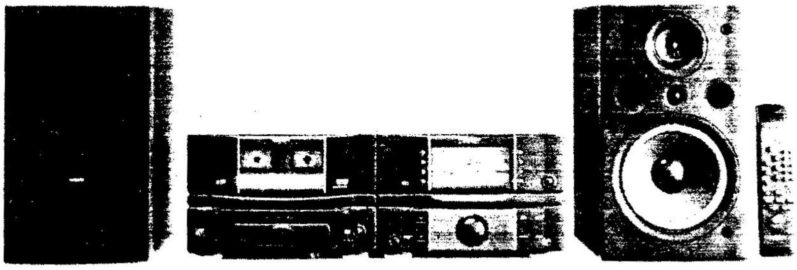
Mini System FW66

/20B/21B/25B

Service
Service
Service



Service Manual

COMPACT
disc
DIGITAL AUDIO

CONTENTS PAGE

Specifications	2....3
Controls & Connections	4
Installation & Operating	5...19
Service Test Program	20...23
Display information	24...26
Dismantling instructions	27...29
Servicing hints	30...31
Wiring Diagram	32...33
Block Diagram	34...36
Front & Selector & Power & diagrams and Print Boards	37...50
CCD Interface diagram and Print Board	51...54
Tuners Diagrams & Print Boards & Adjustments tables	55...69
CD Short Loader	70...84
CD Mini Brick	85...94
Tape Deck	95...122
Exploded views Receiver	123...124
Exploded views CCD	125...127
List of Electrical Parts	128...148

CLASS 1
LASER PRODUCT

Published by Philips Consumer Electronics Printed in The Netherlands ©Copyright reserved Subject to modification GB 4822 725 23971

PHILIPS

PCS 69 335

SPECIFICATION

GENERAL:

Mains voltage	: 230V 50Hz for /20/22 : 240V 50Hz for /25 : 110-127V / 220-240V 50Hz/60Hz for/21 : 100V 50Hz for /26
Power consumption	: ≤180W at 2x33W output power : ≤ 10W at standby
Time setting	: Timer / clock
Remarks time setting	: AM/PM 24 hours
Permissible mains breakdown	: ≤10 min.
Clock accuracy	: 4 sec/day. max.
Timer	: Play / Record
Alarm setting	: 2 + News
Dimensions:(wxhxd)	
FR66	: 260x175x250 mm
CCD66	: 260x175x250 mm
Special features	: 5 band spectrum analyser in LCD display : 6 sound presets Optimal-Jazz-Pop-Classic-Rock-Flat : DBB - Dynamic Bass Boost : Surround switch

AMPLIFIER:

Output power	: ≥2X33W at 6Ω D≤10% (EIAJ) : ≥2X24W at 6Ω D≤0,7% (IEC)
Frequency response	
Lineare inputs	: 40Hz - 20kHz (level 1kHz) within 3dB
Phono	: 40Hz - 18kHz (level 1kHz) within 3dB
Sign.Noise:	
Phone input (Rsource=2k2)	: ≥73dB(A-curve weighted)
Linear inputs (Rsource=22k)	; ≥85dB(A-curve weighted)
Crosstalk:	
Between stereo channels	: ≥35dB (250Hz....6,3kHz) : ≥40dB (1kHz)
Between sources	: ≥60dB (1kHz)
Headphone:	
Output voltage	: 5V EMF at 24W / 6Ω (+-2dB)
Output impedance	: 120Ω
External supply for	: CCD66

TUNER FM Part

Tuning range		: 87.5MHz to 108MHz (Tuning grid 50kHz)
		: 76 MHz to 90MHz (Tuning grid 100kHz) only /26
Aerial input		: 75Ω coaxial
IF frequency		: 10,7MHz
Sensitivity at 26dB S/N	mono	: <7μV
	stereo	: <164 μV
Selectivity at 300kHz bandwidth		: >30dB
IF rejection		: >60dB
Image rejection		: >25dB

TUNER AM Part

Tuning range	MW	: 522kHz to 1611kHz (Tuning grid 9kHz)
		: 522kHz to 1629kHz (Tuning grid 9kHz) only/26
		: 530kHz to 1710kHz or 522kHz to 1611kHz only/21
	LW	: 153kHz to 279kHz (Tuning grid 3kHz) not for /26
Aerial input		: Frame aerial
IF frequency		: 450kHz
Sensitivity at 26dB S/N	MW	: <3,3mV/m
	LW	: <6mV/m
Selectivity at 9kHz bandwidth	MW	: >20dB
	LW	: >24dB
IF rejection	MW	: >24dB
	LW	: >26dB

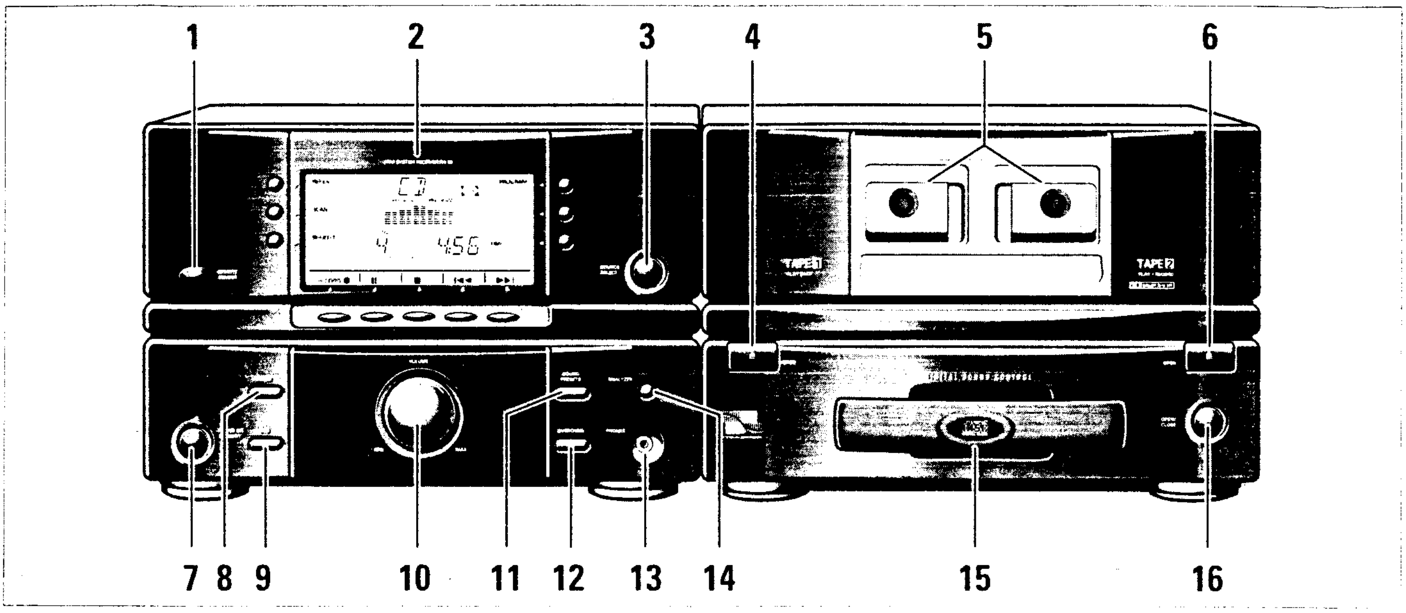
CASSETTE RECORDER

Number of track	: 2
Bolby	: B/C
Auto reverse	: 2 decks
Play Back	: Deck A
Recording Play Back	: Deck B
Tape speed	
Normal speed	: 4.76cm/sec
High speed	: NS x 1.7
Wow flutter	: <0.4% DIN
Fast-wind Time C60	: <130 sec
Bias system	: 88kHz
Recording PB freq. responce within 5dB	: 100Hz 12.5kHz
Mechanical noise NS	: <39dB
Mechanical noise HS	: <47dB

COMPACT DISC

Frequency response	: +2dB -3dB from 20Hz to 20kHz
Signal to noise ratio	: >60dB from 20Hz to 20kHz
Distortion at 1kHz	: <0.03%
Unbalance Left-Right	: max +-1.2dB
Channel crosstalk at 1kHz	: >80dB

1. CONTROLS


1
2
3
4
5
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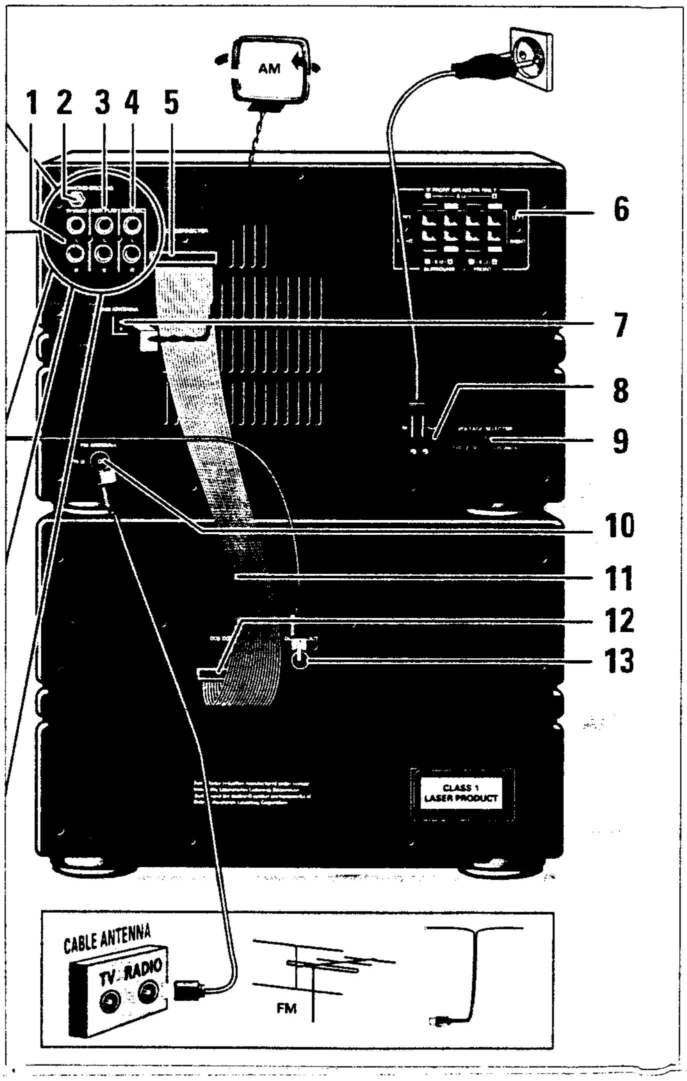
7
8
9
10
11
12
13
14
15
16
TAPE 1
TAPE 2

		Pos.nr.			Pos.nr.
1	Remote Sensor	D6402	9	DBB ON/OFF Button	1474
2	System Display and Buttons	D6401	10	Volume knob with ST/BY indicator	3250 -D6409
3	Source selector button	1471	11	Sound presets button	1473
4	Open Button Deck 1		12	Surround ON/OFF button	1472
5	Cassette holder		13	Phone socket	1680
6	Open Button Deck 2		14	Analyzer ON/OFF button	1740
7	Power ON/Standby	1475	15	CD tray	
8	Timer Button	1476	16	Open/Close button	1320

CONNECTIONS

		Pos.nr.
1	Phono input	1501
2	Phono ground screw	
3	AUX input	1501
4	AUX output	1501
5	CCD input	1504
6	Speakers terminals	1271
7	AM Antenna socket	1149
8	AC Mains socket	1328
9	Voltage selector only/21	1329
10	FM Antenna 75ohm socket	1110
11	System connection cable	
12	CCD connector	1300
13	Digital output only CCD66/00S	1310


AM
1
2
3
4
5
6
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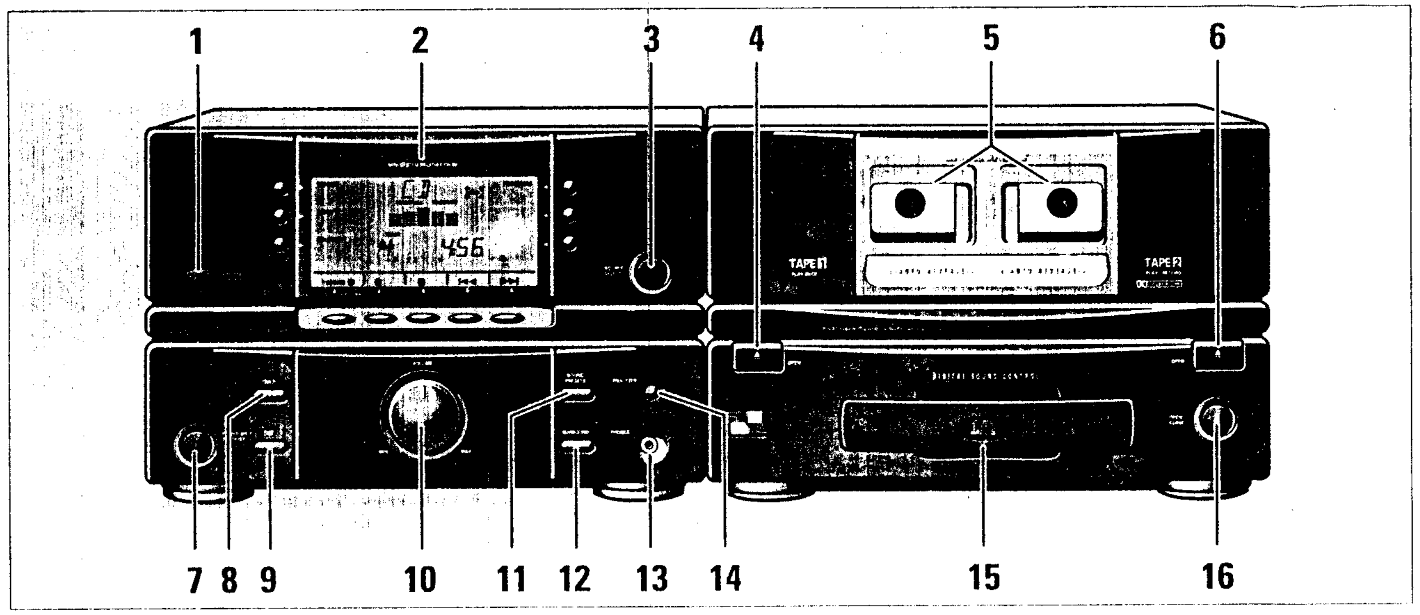
8
9
10
11
12
13
CLASS 1 LASER PRODUCT
CABLE ANTENNA
TV RADIO
FM

2. SYSTEM SURVEY

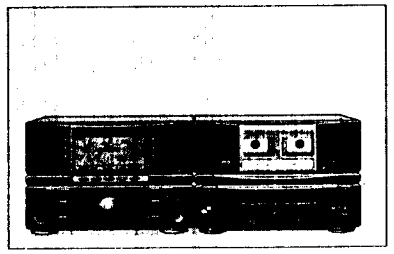

1
2
3
4
5
6
TAPE 1
TAPE 2
7 8 9
10
11 12 13 14
15
16

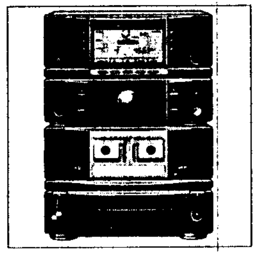
SYSTEM CONTROLS

1 **REMOTE SENSOR** - infrared remote control eye
2 **System display and buttons**
3 **SOURCE SELECT** - press again and again to select the sound source
4 **OPEN ▲** - for opening the deck 1 cassette holder
5 **cassette holders**
6 **OPEN ▲** - for opening the deck 2 cassette holder
7 **POWER ON/STANDBY** - for waking up the system or switching it to the standby mode
8 **TIMER** - for selecting the timer function
9 **DBB** - (on/off) Dynamic Bass Boost, for enhancing the bass tones
10 **VOLUME control with STANDBY indicator**
   - for adjusting the volume
   - the STANDBY indicator lights up when the system is powered and blinks when receiving remote control signals
11 **SOUND PRESETS -** for entering the selection of the equalizer sound presets. Using the display buttons ◀ and ▶ you can select sound presets for several types of music, see chapter SOUND CONTROLS
12 **SURROUND** - (on/off) for creating a spatial effect; use 4 speakers for maximum effect
13 **PHONES** - socket for stereo headphones
14 **ANALYZER**
   - for switching the spectrum analyzer on and off;
   - from the standby position, to enter the SYSTEM SET UP menu
15 **CD tray**
16 **OPEN/CLOSE ▲** - for opening and closing the CD tray

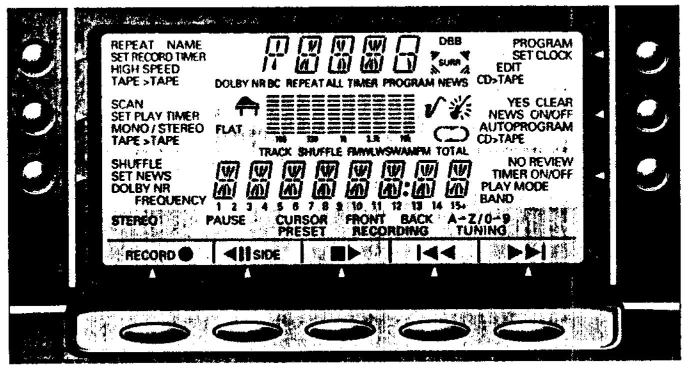
POSITIONING THE SYSTEM

- Do not cover the system.
- Place the system on a hard surface.
- The amplifier produces heat which must be allowed to dissipate freely, so do not cover any ventilation slots and make sure that there is sufficient ventilation around the system. A minimum gap of 15 cm is necessary.
- If you want to use a record player, it is recommended to position it on the right side of the system in order to minimize any interference.
- The preferred order for stacking the system units is shown in the diagrams below: at the left the most preferred position; positioning as shown at the right is allowed as well.

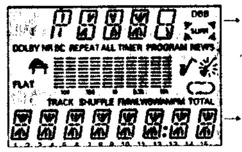




SYSTEM DISPLAY AND BUTTONS

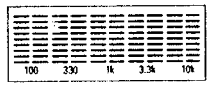

REPEAT NAME
SET RECORD TIMER
HIGH SPEED
TAPE>TAPE
DOLBY NR BC REPEAT ALL TIMER PROGRAM NEWS
PROGRAM
SET CLOCK
EDIT
CD>TAPE
SCAN
SET PLAY TIMER
MONO/STEREO
TAPE>TAPE
FLAT
YES CLEAR
NEWS ON/OFF
AUTOPROGRAM
CD>TAPE
TRACK SHUFFLE
TOTAL
SHUFFLE
SET NEWS
DOLBY NR
FREQUENCY
NO REVIEW
TIMER ON/OFF
PLAY MODE
BAND
STEREO
PAUSE
CURSOR PRESET
FRONT RECORDING
BACK
A-Z/0-9 TUNING
RECORD ●
◀II SIDE
I◀◀
▶▶I

When a sound source or the timer is selected, the available functions appear in the display next to the display buttons. Using the 11 buttons around the display field, you can select the desired function.


DBB
SURR
DOLBY NR BC REPEAT ALL TIMER PROGRAM NEWS
FLAT
TRACK SHUFFLE TOTAL

→Text area to display the selected SOURCE.

→Text area to display information and messages.


100
330
1k
3.3k
10k

spectrum analyzer, shows the frequency distribution of the reproduced sound, or the equalizer setting for the selected sound preset.

DBB Dynamic Bass Boost is switched on.

SURR SURROUND sound is switched on.

The sound preset for JAZZ music is selected.

The sound preset for POP music is selected.

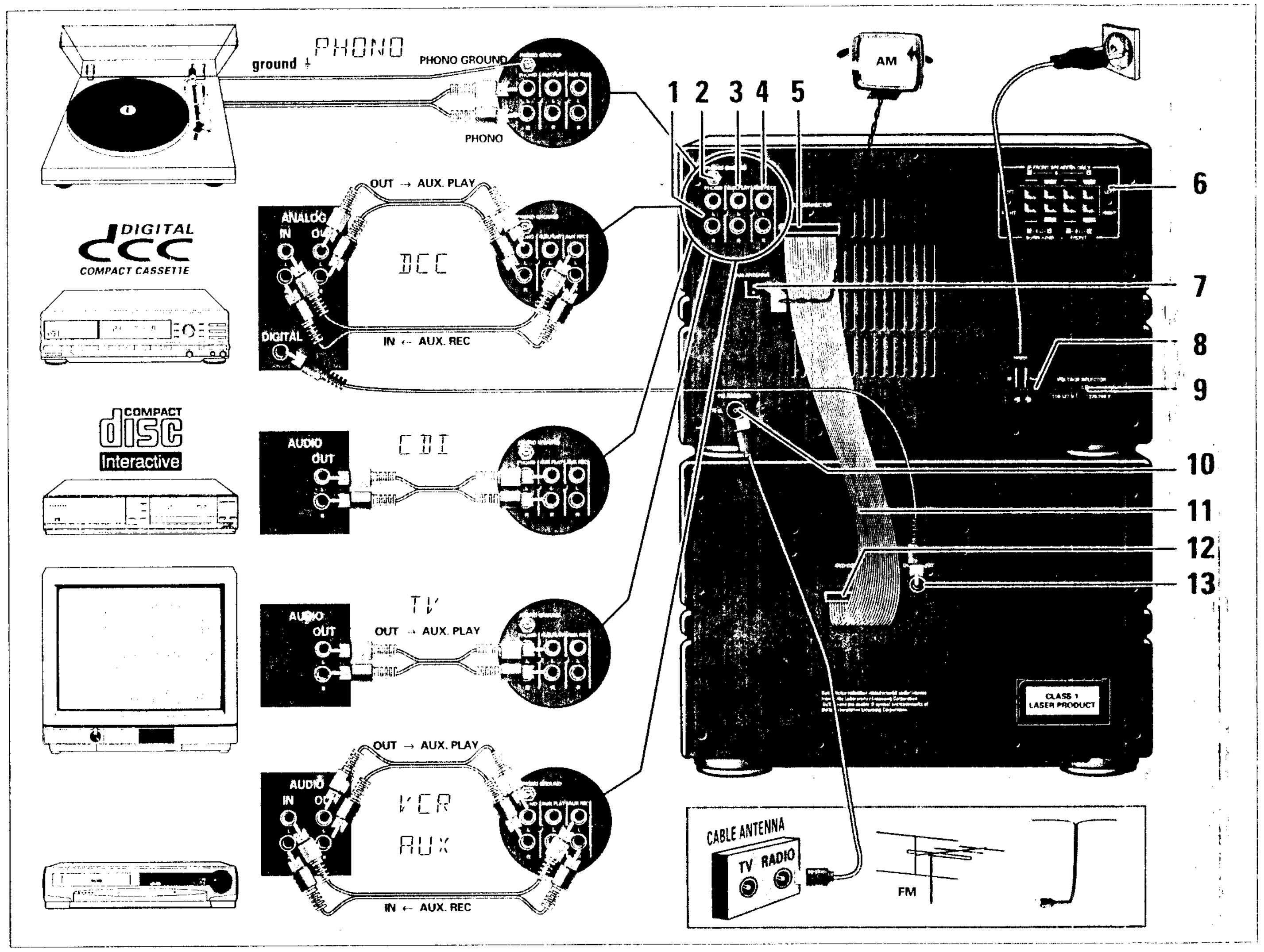
The sound preset for CLASSICAL music is selected.

The sound preset for ROCK music is selected.

FLAT The equalizer is inoperative.

The selected REVERSE mode for the cassette decks:
- continuous reverse;
- single reverse;
- no reverse.

3. CONNECTIONS


PHONO
ground
PHONO GROUND
PHONO
DIGITAL
dcc
COMPACT CASSETTE
OUT → AUX. PLAY
ANALOG
IN
OUT
DCC
DIGITAL
IN ← AUX. REC
COMPACT
disc
Interactive
AUDIO
OUT
CDI
TV
OUT → AUX. PLAY
AUDIO
IN
OUT
OUT → AUX. PLAY
VCR
AUX
IN ← AUX. REC
AM
1 2 3 4 5
6
7
8
9
10
11
12
13
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TV
RADIO
FM

BACK PANEL

1 **PHONO** - input sockets for a record player with magneto-dynamic pick-up cartridge
2 **PHONO GROUND** - for the earth wire of a record player
3 **AUX PLAY** - analog input sockets for an external sound source, e.g. a DCC-deck or the sound channel of a TV set, video recorder etc.
4 **AUX REC** - analog output sockets for e.g. an external DCC-deck
5 **CCD connector** - for connecting the flat system connection cable
6 **SPEAKERS** - speaker terminals
7 **AM ANTENNA** - connector for the supplied AM/MW frame aerial
8 **AC MAINS** - socket for the mains lead
9 **VOLTAGE selector** *(not on all versions)*
10 **FM ANTENNA 75 Ω** - socket for the FM aerial
11 **System connection cable** - flat cable for connecting the system units
12 **CCD connector** - for connecting the flat system connection cable
13 **DIGITAL OUT** *(not on all versions)* - digital CD output socket for e.g. recording a CD on an external DCC-deck

PHONES (on front panel)

You can connect stereo headphones with a 3,5 mm plug to the PHONES socket. Inserting the plug will disconnect the speakers.

MICRO (on front panel, not on all versions)

By connecting a microphone with 3.5 mm plug to the MICRO socket, you can mix your voice with any sound source.
The level of the microphone signal is adjusted using the MIC/MIX control.
It is also possible to record the mixed signal.

SYSTEM CONNECTION CABLE

Before connecting or disconnecting, always switch the system to STANDBY.

- Connect the flat system connection cable to both CCD CONNECTORS. Insert the plug into the connector until it clicks firmly in place.
- You can remove the plug by pressing the left and right snaps together and pulling out the plug. Do not pull at the cable.

AERIALS

- **FM**: connect the FM ANTENNA socket to the Community or Cable Antenna System or to a roof-mounted FM aerial with an impedance of 75 ohms. If none of these are available, connect the supplied wire aerial (dipole) to this socket, find a position for best reception and mount it to the wall or window in a T-shape. Keep the dipole aerial away from the system and never let it touch the flat system cable to avoid unwanted noise.
- **AM/MW/LW:** connect the plug of the supplied AM frame aerial to the AM ANTENNA socket and position the frame aerial for best reception. Do not place the frame aerial too close to the units, the wires or the boxes, as this may cause unwanted noise.

PHONO

Input sockets for a record player with magneto-dynamic pick-up cartridge

- Connect the PHONO cable to the PHONO sockets, left to left ('L') and right to right ('R').
- Clamp the earth wire of the record player under the PHONO GROUND terminal.

3. CONNECTIONS

AUX PLAY/REC

AUX PLAY input sockets for amplifying or recording the signal from an external sound source, e.g. a TV, video recorder, DCC-deck etc.

- Connect the AUX PLAY input sockets to the sockets LINE OUT, AUDIO OUT, or ANALOG OUT of the other set, left to left ('L') and right to right ('R').

AUX REC output sockets for linking the system signal to external equipment, e g. a recorder, amplifier, DCC-deck etc.

- Connect the AUX REC output sockets to the sockets AUX, LINE IN, AUDIO IN, or ANALOG IN of the other set, left to left ('L') and right to right ('R').

DIGITAL OUT (not on all versions)

For linking the digital signal from the system CD-player to e.g. a DCC-deck or other digital equipment.

- Connect the DIGITAL OUT socket to the socket DIGITAL IN of the other set.

CONNECTING A DCC-RECORDER

When connecting a DCC-deck, always connect both the DIGITAL and the AUX REC and PLAY sockets to the DCC-deck.

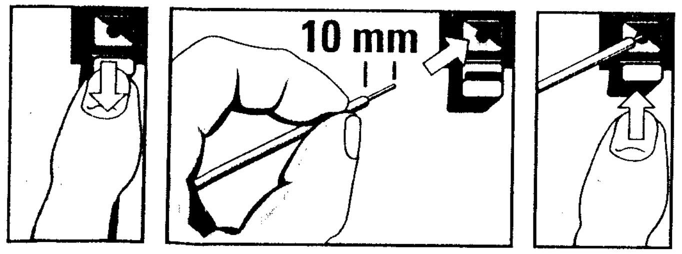
- For digital recording from the CD player, connect the DIGITAL OUT socket to the socket DIGITAL IN of the DCC recorder.
- For analog DCC-recording from the system tuner or tape deck, connect the AUX REC output sockets to the ANALOG IN sockets of the DCC-deck, left to left ('L') and right to right ('R').
- For playback of the DCC-deck through the system, connect the AUX PLAY input sockets to the ANALOG OUT sockets of the DCC-deck, left to left ('L') and right to right ('R').

SPEAKERS

You can connect only the 2 supplied FB 66 speakers or you can create a 4-speaker system for surround sound using two extra speakers having an impedance of at least 6 Ohms, e g. our special surround-sound speakers, type FB 305.

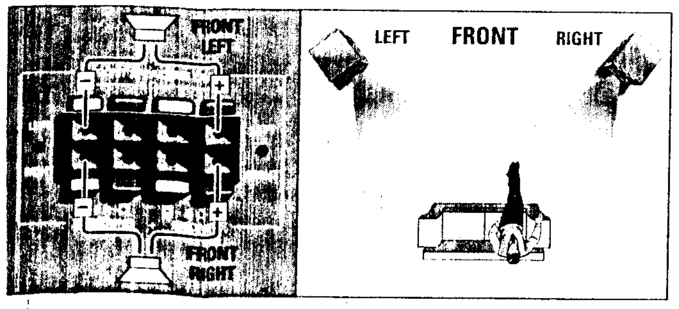
Speaker positioning

You will find the best speaker position by experimenting.
Placing the speakers on the floor will increase the bass response.
Placing the speakers behind curtains, furniture etc. will reduce the treble response and the stereo effect.
The ideal position is obtained when the 2 front speakers and the listening position build an equilateral triangle and the speakers are at ear-height.



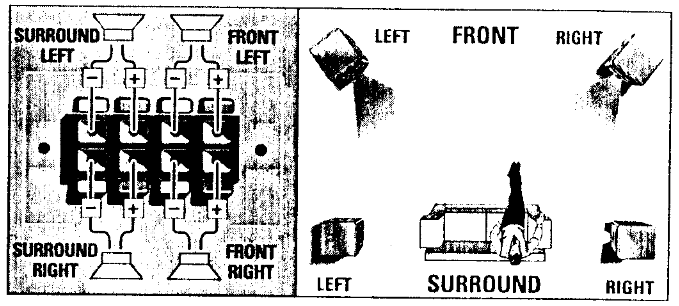
2-speaker system

- Connect the black or non-marked wires to the black terminals and the red or marked wires to the red terminals.



4-speaker system

- ***Front speakers FB 66:*** Connect the black or non-marked wires to the black FRONT terminals and the red or marked wires to the red FRONT terminals.
- ***Rear speakers, e.g. FB 305:*** Connect the black or non-marked wires to the black SURROUND terminals and the red or marked wires to the red SURROUND terminals.



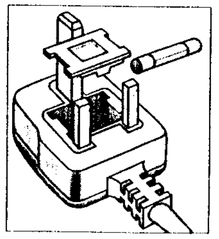
MAINS LEAD

- Before connecting the system to the mains, proceed as follows:
  - If the system is equipped with a VOLTAGE selector, first adjust the voltage selector to the local mains voltage.
  - If the system does not have a voltage selector, first check if the mains voltage as shown on the type plate on the back of the system corresponds to your local mains voltage. If it does not, consult your dealer or service organisation.
- After all other connections have been made, connect the mains lead to the AC MAINS socket and insert the plug of the mains lead in the wall socket.
- When connected to the mains, the system is always energised.To switch off the mains supply completely, pull the mains plug out of the wall socket.

Important!
When the power supply is interrupted, e.g. by pulling the mains plug out of the wall socket, the memory for clock time settings will only be kept for about 10 minutes.

Important notes for users in the U.K.

Mains plug
This apparatus is fitted with an approved moulded 13 Amp plug. To change a fuse in this type of plug proceed as follows:



- Remove fuse cover and fuse.
- Fix new fuse which should be a BS1362 5 Amp, A.S.T.A. or BSI approved type.
- Refit the fuse cover.

If the fitted plug is not suitable for your socket outlets, it should be cut off and an appropriate plug fitted in its place.

If the mains plug contains a fuse, this should have a value of 5 Amp. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5 Amp.

Note:: The severed plug must be disposed to avoid a possible shock hazard should it be inserted into a 13 Amp socket elsewhere.

How to connect a plug
The wires in the mains lead are coloured with the following code: blue = neutral (N), brown = live (L).
As these colours may not correspond with the colour markings identifying the terminals in your plug, proceed as follows:

- Connect the blue wire to the terminal marked N or coloured black.
- Connect the brown wire to the terminal marked L or coloured red.
- Do not connect either wire to the earth terminal in the plug, marked E (or ⏚) or coloured green (or green and yellow).

Before replacing the plug cover, make certain that the cord grip is clamped over the sheath of the lead - not simply over the two wires.

Copyright in the U.K.
Recording and playback of material may require consent. See Copyright Act 1956 and The Performer's Protection Acts 1958 to 1972.

4. SYSTEM SET-UP

SWITCHING THE SYSTEM ON AND OFF (Stand By)

When connected to the mains, the system is always energised. To switch off the mains supply completely, pull the mains plug out of the wall socket.

Waking up the system

- The normal way to wake up the system is by pressing the button POWER ON/STANDBY or SOURCE SELECT or a source select button on the remote control. The display illumination lights up.

Switching the system to STANDBY

- Press POWER ON/STANDBY or press SYSTEM STANDBY on the remote control. The system will enter the standby mode (a kind of sleeping mode). The display illumination goes out and the display shows the current day and time. The red indicator on VOLUME will always stay on..

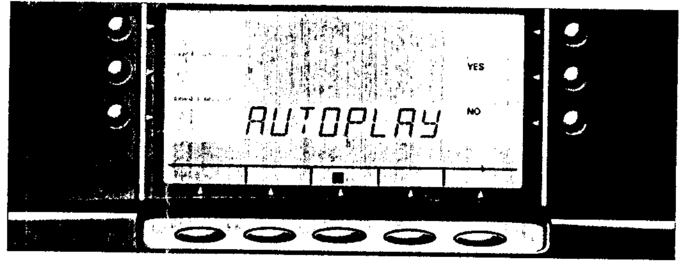
Important! When the power supply is interrupted, e.g. by pulling out the mains plug, the clock time settings will only be kept for about 10 minutes. If the clock time settings are lost, the day and time are flashing and you need to (re)adjust the day and time settings, see chapter CLOCK / TIMER.

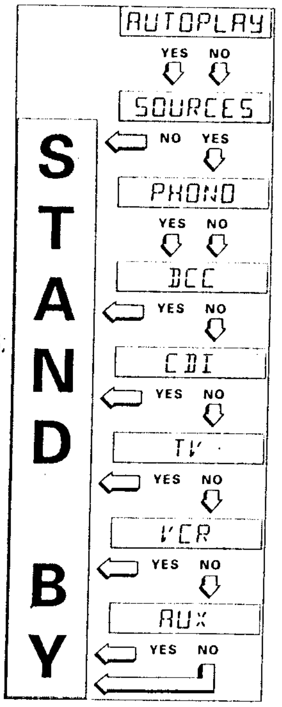
SYSTEM SET-UP MENU

The system set-up menu allows you to customize your system to your specific user situation and preferences. AUTOPLAY enables automatic start of CD playback. The SOURCES menu allows you to choose and name the relevant sound sources connected to the PHONO and AUX. PLAY sockets. After that, only the chosen sources will appear when selecting sound sources.

Entering the SYSTEM SET-UP menu

- Set the system to the STANDBY mode.
- Press the ANALYZER button; AUTOPLAY YES/NO appears.





AUTOPLAY
If AUTOPLAY is switched on, the CD will start automatically after closing the CD tray. If AUTOPLAY is switched off, you will have to start CD playback by hand.

- If you want to switch ***on*** AUTOPLAY, press YES; if you don't, press NO. SOURCES YES/NO appears.

SOURCES

- If you ***do not*** want to select additional sources, press NO; the system returns to standby.
- If you want to select the sources, press YES; PHONO YES/NO appears.

PHONO

- If a record player (PHONO) is connected, press YES, if not, press NO; DCC YES/NO appears.

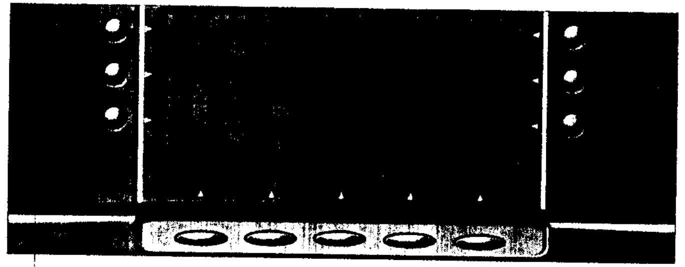
AUX PLAY socket

- If a DCC deck, a CDI player, a TV or a VCR (videorecorder) is connected, press YES as soon as the required name appears; the system returns to standby.
- If ***other equipment*** is connected to AUX.PLAY, press YES as soon as AUX appears, the system returns to standby.
- If ***no*** equipment is connected to AUX.PLAY, press NO; the system returns to standby.

Note: If you press ■, the system returns to standby without changing the last step.

CLOCK

When the system is in position STANDBY, the display illumination is off and the current day and time are displayed.



If the day and time indication is flashing, you need to (re)adjust the day and time settings, see chapter CLOCK / TIMER.
When the power supply is interrupted, e.g. by pulling out the mains plug, the clock time settings will only be kept for about 10 minutes.

SWITCHABLE 'OPTIMAL' SOUND PRESET

Among the available sound presets like CLASSIC, JAZZ, ROCK , POP and FLAT you will find a so-called OPTIMAL preset.
This OPTIMAL equalizer setting is specially tuned to the acoustics of the supplied FB 66 speakers. If you connect other speakers instead of the supplied ones, it is advised to delete the OPTIMAL setting from the sound preset menu.

Eliminating or adding the OPTIMAL sound preset

- Pull out the mains plug.
- Keep the buttons **SOUND PRESETS** and **ANALYZER** pressed while inserting the mains plug.
  If the message OPTIMAL shortly appears, the sound preset is available;
  If the message NO OPTIM shortly appears, it is eliminated.

SWITCHABLE LW WAVE BAND (not on all versions)

Some countries do not have a LW waveband. In some versions it is possible to delete the LW waveband from the BAND menu.

- Pull out the mains plug.
- **To include the LW band:** Keep the buttons BAND and TUNING ◂◂ pressed while inserting the mains plug. Then release the buttons; the display shows for 2 seconds the message LW ON
- **To delete the LW band:** Keep the buttons BAND and TUNING ▸▸ pressed while inserting the mains plug. Then release the buttons; the display shows for 2 seconds the message LW OFF

SWITCHABLE TUNING GRID (not on all versions)

In North and South America the frequency step between adjacent channels in the AM/MW band is 10 kHz. In the rest of the world this step is 9 kHz. In some versions the frequency step can be changed.
Usually the frequency step has been preset in the factory for your area.

- Pull out the mains plug.
- **To select 9 kHz:** Keep the buttons BAND and TUNING ◂◂ pressed while inserting the mains plug. Then release the buttons; the display shows for 2 seconds: AM 9 KC
- **To select 10 kHz:** Keep the buttons BAND and TUNING ▸▸ pressed while inserting the mains plug. Then release the buttons; the display shows for 2 seconds: AM 10 KC

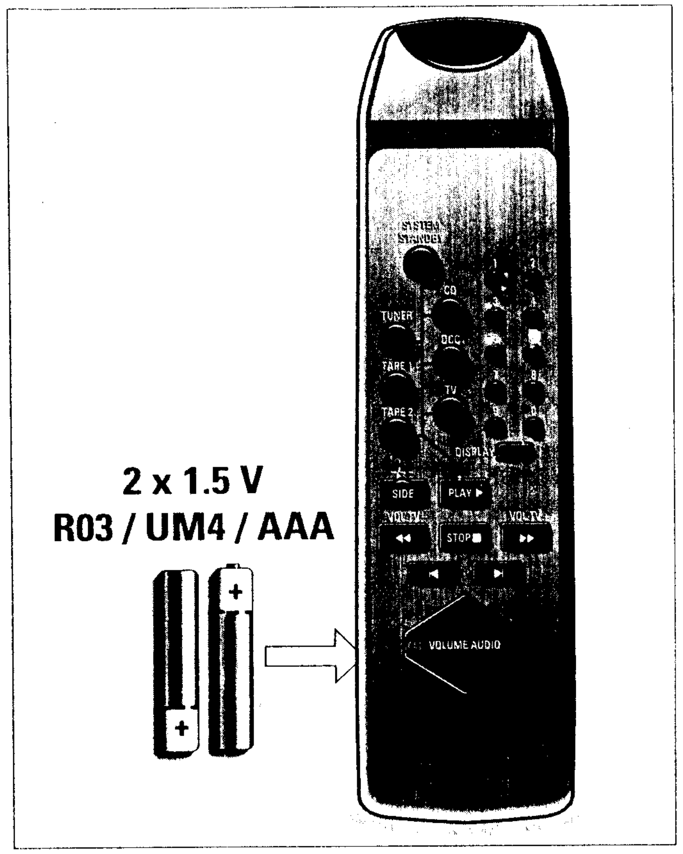
MICROPHONE MIXING 'Karaoke' (ot on all versions)

By connecting a microphone with 3.5 mm plug to the MICRO socket, you can mix your voice with any sound source. It is also possible to record the mixed signal. However, mixing is not possible in position TAPE>TAPE and CD>TAPE recording.

- Before connecting the microphone, set VOLUME to MIN (minimum).
- Adjust the mixing ratio with the MIC/MIX control

  MIC / MIX - to adjust the level of the microphone signal *(not on all versions)*
  MICRO – microphone socket *(not on all versions)*

5. REMOTE CONTROL



- Open the battery compartment and insert two batteries, type R03, UM-4 or AAA cells, as indicated above.
- Remove the batteries when they have run down or if they will not be used again for a long period. The lifetime of the batteries is about one year.

SYSTEM STANDBY
To switch the system to the STANDBY mode

TUNER - CD - TAPE 1 - TAPE 2 - DCC - TV
To select the sound source (and wake-up from standby)
Note: DCC and TV functions are only available when these sources are connected and selected in the SYSTEM SET-UP menu. The DCC functions are also available when selected as AUX source.

Digit button 1 - 0
TUNER: to select directly the preset radio station
CD: to select directly the required track number

DISPLAY
To switch the system display Illumination on and off

–/– – and SIDE
– / – – for TV-channel selection only: to select a 1-digit (–) or 2-digit (– –) number, e.g. – for number 3, – – for number 16.
SIDE (for TAPE 1 and 2 only) to reverse the TAPE 1 or TAPE 2 tape travel direction (FRONT/BACK.

PLAY ▶
To start playback for the selected source: CD, TAPE 1 or TAPE 2.

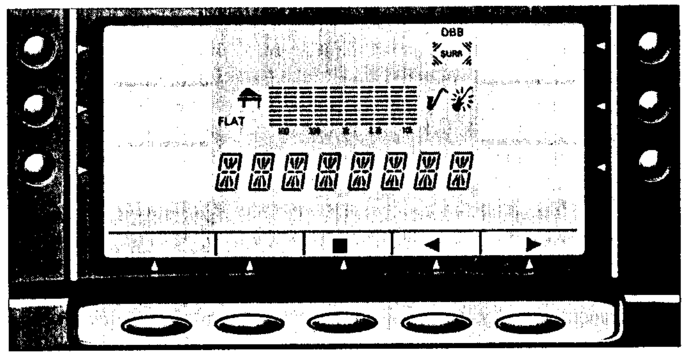
VOL TV – / + and ◀◀ / ▶▶
TV: adjusting the VOLUME down/up
System: same function as display buttons ◀◀ / ▶▶ (if visible)

STOP ■
System: same function as display button ■ (if visible)

⏮ / ⏭
System: same function as display buttons PRESET ◀ ▶ or ⏮ ⏭ (if visible)

VOLUME AUDIO
To adjust the volume (up/down).

6. SOUND CONTROLS



DBB - DYNAMIC BASS BOOST

- To enhance the bass tones (volume-position-dependent), press DBB.
  DBB The word DBB appears. The DBB-setting is maintained when setting the system to STANDBY.

SURROUND SOUND

- To obtain a spatial sound effect (only possible with stereo signals), press SURROUND. The surround effect is optimal when using 4 speakers.
  SURR The SURROUND symbol appears. When setting the system to STANDBY, SURROUND is always switched off.

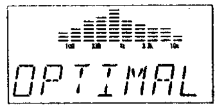
SPECTRUM ANALYZER

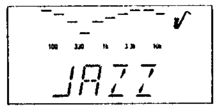
The graph bars in the centre of the display show the sound levels, divided in the frequency bands 100 Hz – 330 Hz – 1 kHz – 3.3 kHz – 10 kHz.
The spectrum analyzer shows continuously moving the frequency distribution of the actual sound.
By pressing the ANALYZER button, the spectrum analyzer bars are either hidden or shown.
When waking up the system, the spectrum analyzer bars are always shown.

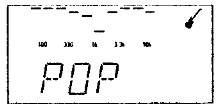
SOUND PRESETS

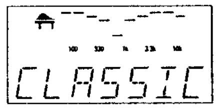
A graphic equalizer enables the sound level for each frequency band (from bass tones to treble tones) to be decreased or boosted with respect to each other.
The SOUND PRESETS are fixed equalizer settings and give an optimal sound for different kinds of music.
The equalizer uses the same 5 frequency bands as the spectrum analyzer.

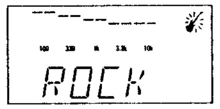
- To select an equalizer preset, press SOUND PRESETS once and select the required SOUND PRESET using the display buttons ◀ ▶. To leave the SOUND PRESET mode, press ■ or press SOUND PRESETS again.
  The equalizer setting (SOUND PRESET) is shown as a stationary curved or straight line. When OPTIMAL is selected, the spectrum analyzer graph bars are moving.

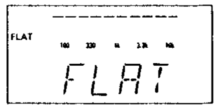












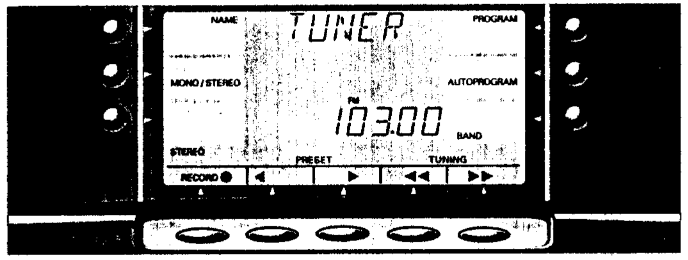
- If FLAT is selected, the equalizer is switched off (no sound adjustment).
- The (factory-set) OPTIMAL equalizer setting is specially tuned to the acoustics of the supplied FB 66 speakers. If you connect other speakers instead of the supplied ones, it is advised to delete the OPTIMAL setting from the SOUND PRESET menu, see chapter SYSTEM SET-UP.

7. TUNER

GENERAL OPERATION

- Select the tuner by pressing the SOURCE SELECT button several times until TUNER appears, or press the TUNER button on the remote control.
- Select a stored preset radio station using PRESET ◀ ▶.
- When a non-stored frequency is required, select the band by pressing BAND until the desired band appears and then tune to the radio station using TUNING ◀◀ or ▶▶.
  The correct procedure is described in the following sections.
- When the word STEREO appears, you are receiving a FM-stereo radio station. A disturbing noise, due to a weak FM-stereo signal, can be suppressed by pressing MONO/STEREO. The word STEREO disappears, the message MONO appears shortly and you will hear the FM radio station in mono.
- Adjust the volume with VOLUME.
- To select an equalizer preset, press SOUND PRESETS once and select the required SOUND PRESET using the display buttons ◀ ▶. To leave the SOUND PRESET mode, press ■ or press SOUND PRESET again.
- Press ANALYZER to switch the spectrum analyzer or or off.
- To obtain a spatial sound effect (only possible with stereo signals), press SURROUND. The SURROUND symbol appears.
- To enhance the bass tones (volume-position-dependent), press DBB. The word DBB appears.

TUNING



Search tuning
- Select the wave range with BAND.
- Press TUNING ◀◀ or ▶▶ for more than 0.5 seconds and release the button. The tuner will now search until a radio station of sufficient strength has been found. The display shows the tuned frequency. If the frequency has already been stored, the preset number is also displayed.
- If the radio station found is not the desired one, press TUNING ◀◀ or ▶▶ again for more than 0.5 seconds.

Manual tuning to weak radio stations
Weak radio stations are skipped during search tuning. They can be tuned to as follows:

- Keep TUNING ◀◀ or ▶▶ pressed until you approach the required frequency.
- To stop running, press the opposite TUNING button (◀◀ or ▶▶).
- Press TUNING ◀◀ or ▶▶ for less than 0.5 seconds to change the frequency step-by-step until the right frequency has been reached or until optimum reception is obtained.

RECORD ●

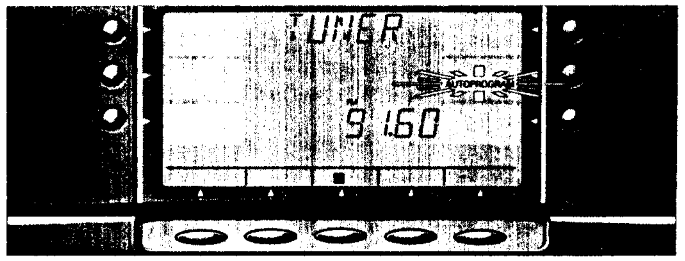
- As soon as you press RECORD ●, the actual sound will be recorded on TAPE 2, provided a cassette suitable for recording is loaded.
- To stop recording, press ■.

PRESET RADIO STATIONS

You can store up to 30 preferred radio stations in the memory.

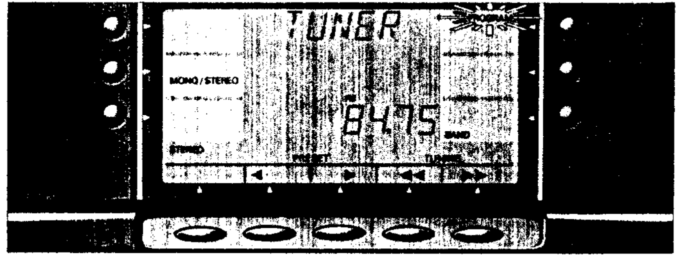
Automatic programming of preset radio stations
30 radio stations can be stored automatically in the memory. If less than thirty radio stations are found on the FM band, the MW band (and if necessary the LW band) are scanned as well to fill the rest of the memory locations.
This function will clear the old preset numbers (including assigned radio station names). If less than 30 radio stations are found, the remaining preset numbers will not be changed.
If you want to maintain some old presets, e.g. preset 1-9, select preset 10 before starting autoprogramming: now only the presets 10 up to 30 will be programmed now.

- Press AUTOPROGRAM for more than 1 second and then release.



AUTOPROGRAM starts flashing on the display. When a radio station is found, its frequency and the preset number are displayed for two seconds. Scanning is finished when the the preset number at which AUTOPROGRAM was started, is displayed again.
- Press ■ or press AUTOPROGRAM again if you want to interrupt the automatic programming. The preset number at which AUTOPROGRAM was started will be selected.

Manual programming of preset radio stations
- Press PROGRAM to enter the programming mode.



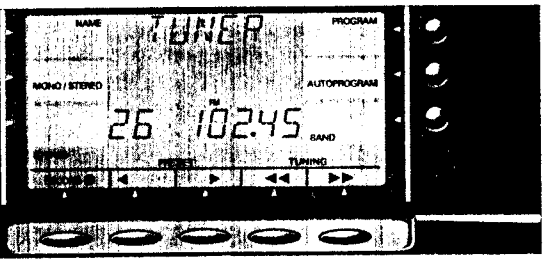
PROGRAM starts flashing on the display.
- Select the wave band by pressing BAND.
- Tune to the frequency of the radio station to be stored using TUNING ◀◀ ▶▶. (as described under TUNING).
- A stereo FM radio station can be stored in mono by pressing MONO/-STEREO before selecting a preset number.
- Select the desired preset number for the radio station using PRESET ◀ ▶.
- Press PROGRAM again.
  The band and frequency are stored under the selected preset number and you leave the programming mode.
- Repeat this procedure to store other frequencies and presets in the memory.
- You can clear a preset number by storing another frequency in its place.

Note: When a new frequency is stored, the radio station name belonging to the old frequency is cleared.

7. TUNER

Selecting a preset radio station

There are several options to select a preset radio station:



- On the tuner, press PRESET ◀ ▶ until the desired preset radio station appears on the display.
- On the remote control, press ⏮ or ⏭ until the desired preset radio station appears on the display.
- On the remote control, press the digit numbers to form the desired preset number. Presets consisting of two figures must be selected **within 2 seconds**, otherwise only the first number will be selected.

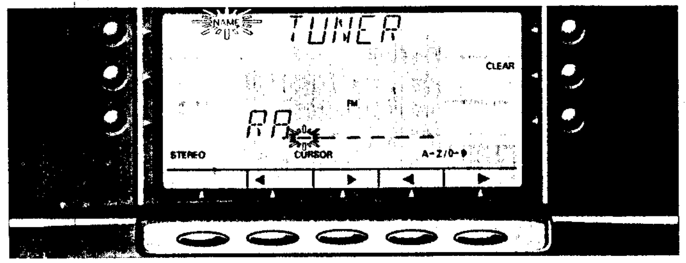
TUNER DISPLAY MESSAGES

MONO	– FM mono is selected for this radio station • Leave this way or press MONO/STEREO again
PRESS LONGER	– AUTOPROGRAM was pressed too shortly • Keep AUTOPROGRAM pressed longer
SELECT PRESET	– A preset radio station needs to be selected • Press PRESET ◀ ▶ to select a radio station
SELECT PRESET BELOW 21	– Station name cannot be given to presets between 21 and 30 • Select a preset below 21 using PRESET ◀ ▶
NEWS OFF	– NEWS TIMER switched off • Leave this way or press NEWS ON/OFF

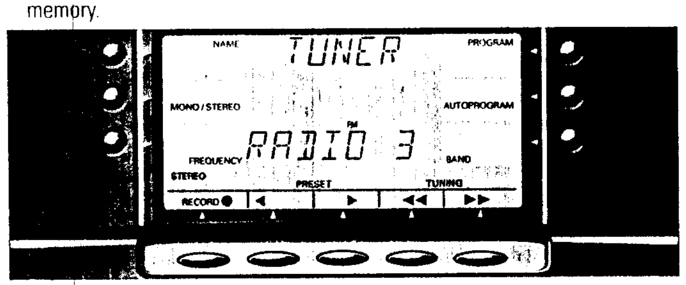
PROGRAMMING A STATION NAME

You can assign a name of 8 characters to the preset radio stations 1-20.
It is not possible to assign a station name to the presets 21-30.

- First choose a preset radio station (1-20).
- Press NAME to enter the name programming mode.
  On the display, NAME starts flashing. If a name has already been stored, this name will then be displayed.
  A flashing cursor is located in the leftmost position.
- Press CURSOR ◀ ▶ to move the cursor to a next or previous position.
- Press A–Z / 0–9 ◀◀ ▶▶ until the desired character is displayed at the cursor position.



- If the station name is correct, press NAME to store the name in the memory.

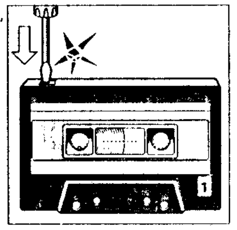


Notes:
- You can erase a station name by pressing CLEAR in the NAME programming mode. You then leave the programming mode.
- If the NAME programming mode is selected for more than 1.5 minutes without pressing CURSOR ◀ ▶ or A–Z / 0–9 ◀◀ ▶▶, the last name will be recalled again and the NAME programming mode will be left without storing any changes.

8. TAPE DECKS

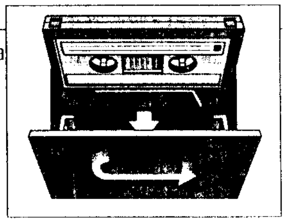
COMPACT CASSETTES

- At the very beginning and end of the tape, no recording will take place during the 7 seconds when the leader tape passes the recorder heads.
- To prevent the accidental erasure of a recording, keep the cassette side to be safeguarded in front of you and break out the left tab. Now, recording on this side is no longer possible.
  To render this safeguard ineffective, cover the aperture with a piece of adhesive tape.
- Do not expose the cassettes to rain, moisture, sand, or to excessive heat e.g. from heating equipment or in motor cars parked in the sun.



AUTOMATIC TAPE SELECTION

The deck will always detect the presence of a cassette in the cassette holder and will automatically select the tape type (NORMAL or CrO2) as soon as the cassette holder is closed.



DOLBY NOISE REDUCTION

- Dolby B or C Noise Reduction is switched on and off by pressing the DOLBY NR display button until the required indication appears:
  - DOLBY NR **B** for Dolby B Noise Reduction;
  - DOLBY NR **C** for Dolby C Noise Reduction;
  - If DOLBY NR disappears completely, it is switched off.

  Noise reduction is approximately a factor 3 with Dolby B NR and a factor 10 with Dolby C NR.
  A cassette recorded with Dolby Noise Reduction must also be played back in the Dolby NR mode. If you forget to adjust the DOLBY NR setting, the treble may be reproduced too strongly or too faintly.
- When dubbing (copying from TAPE 1 to TAPE 2), an original cassette recorded with Dolby NR automatically produces a copy with Dolby NR.

1x	DOLBY NR B
2x	DOLBY NR C
3x	

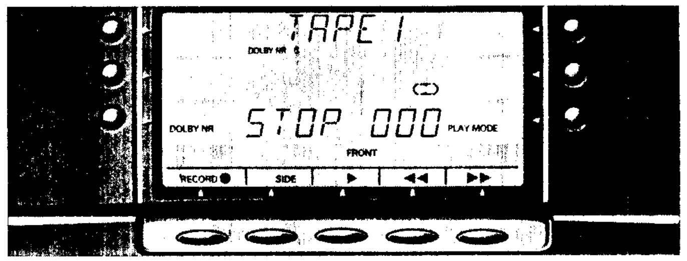
Dolby noise reduction is manufactured under license from Dolby Laboratories Licensing Corporation. DOLBY and the double-D symbol ᗡD are trademarks of Dolby Laboratories Licensing Corporation.

TAPE DISPLAY MESSAGES

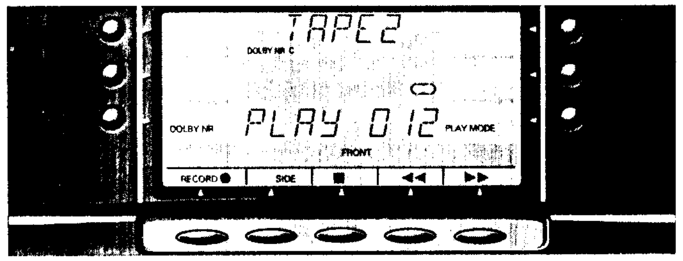
NO TAPE	– No cassette inserted • Insert a cassette
	– CCD unit (CD/TAPE) is not connected • Connect CCD-unit using the flat cable
PROTECT	– The cassette is protected against recording • Replace cassette or undo protection
RECORDING	– Appears after starting a recording • Leave this way or press ■ to stop TAPE 2
RECORDING STOPPED	– Appears after stopping a recording • Continue with any command
Tape counter (last 3 digits)	– Runs during TAPE 1 and TAPE 2 playback • No action
REC + tape counter (last 3 digits)	– Runs during TAPE > TAPE dubbing • No action
C60, C90, C100, C120, C30, or C46	– Cassette playing time for EDIT CD > TAPE • Select with ◀ ▶, confirm with ■

CASSETTE PLAYBACK - on tape 1 or 2

- Select TAPE 1 or TAPE 2 using the SOURCE SELECT button or the remote control.
  The source TAPE 1 or TAPE 2 appears on the display.



- Press the appropriate OPEN ▲ button to open the cassette holder.
- Insert a recorded cassette with the open side facing downwards.
- Close the cassette holder.
- Press PLAY MODE until the desired indicator lights up:
  - ⊐ **no reverse,** to play one cassette side. At the end of the first cassette side, the tape stops.
  - ⊐) **single reverse,** to play both cassette sides once. At the end of the first cassette side, the tape direction is reversed and the recorder stops at the end of the second cassette side.
  - (⊐) **continuous reverse** for non-stop playback. The recorder reverses the tape direction (up to six times) whenever reaching the end of the cassette. To stop, press ■.
- Select the tape direction to start with by pressing SIDE. The word FRONT or BACK shows which side of the cassette is being played.
- Check if the cassette is recorded with or without Dolby Noise Reduction and press DOLBY NR until the required indication appears, see DOLBY NOISE REDUCTION.
- Press ▶ to start playback.

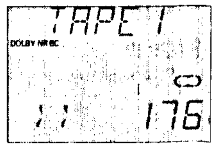


- Adjust the volume with VOLUME.
- To select an equalizer preset, press SOUND PRESETS once and select the required SOUND PRESET using the display buttons ◀ ▶. To leave the SOUND PRESET mode, press ■ or press SOUND PRESET again.
- Press ANALYZER to switch the spectrum analyzer or or off.
- To obtain a spatial sound effect (only possible with stereo signals), press SURROUND. The SURROUND symbol appears.
- To enhance the bass tones (volume-position-dependent), press DBB. The word DBB appears.
- During playback you can reverse at any moment the tape direction by pressing SIDE. The word FRONT or BACK shows which cassette side is being played and the tape counter is set to 000.
- Press ■ to stop playback.

FAST WINDING

The tape can be fast wound or rewound in two ways:

From the STOP position
- To start fast winding, press shortly ◀◀ or ▶▶. fast winding is stopped when the end of the tape is reached, or when ■ is pressed.



During cassette playback
- For fast winding, keep ◀◀ or ▶▶ pressed: when releasing the button, fast winding will stop and the cassette is played in the normal way again.

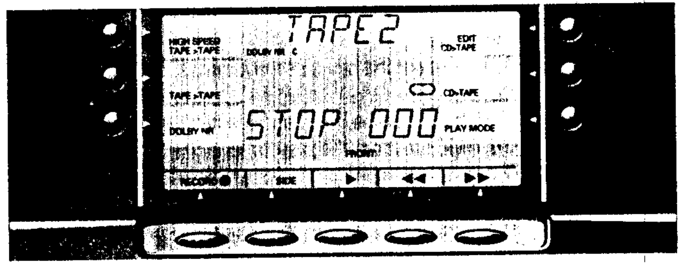
8. TAPE DECKS

PREPARING TAPE 2 FOR RECORDING

Notes:

1. Recording is only possible on TAPE 2.
2. During recording, do not wind or rewind the cassette in TAPE 1, since this may affect the recording quality.
3. When going to STANDBY during recording or dubbing, recording will stop.

- Select TAPE 2 using the SOURCE SELECT button or the remote control. The source TAPE 2 appears on the display.



- Press the TAPE 2 OPEN ▲ button to open the cassette holder.
- Load the cassette to be recorded into TAPE 2. Ensure that the cassette tabs are not broken out.
- Close the cassette holder.
- Press PLAY MODE until the desired indicator lights up:
  - ⊥ **no reverse,** to record one cassette side. At the end of the first cassette side, the tape stops.
  - ⊃ **single reverse,** to record both cassette sides. At the end of the first cassette side, the tape direction is reversed and the recorder stops at the end of the second cassette side.
- Select the tape direction to start with by pressing SIDE. The word FRONT or BACK shows which side of the cassette will be recorded.
- If desired, wind or rewind the tape to the position you want to start recording.
- Press DOLBY NR until the required indication appears, see DOLBY NOISE REDUCTION.
- To select the sound source, see the next chapters.

RECORD ●

- If TAPE 1 is selected as source and you press RECORD ●, TAPE 1 will be copied to TAPE 2, provided a cassette suitable for recording is loaded.
- If TAPE 2 is selected as source and you press RECORD ●, TAPE 2 will record a silence, provided a cassette suitable for recording is loaded.
- To stop recording, press ■.

RECORDING

- Prepare the TAPE 2 deck for recording, see above.
- To select the sound source to be recorded, there are three possibilities:
  1. From the sound source to be recorded, start recording by pressing RECORD ●.
     If you press RECORD ● from the TAPE 2 position, TAPE 2 will erase the cassette and record a silence.
     When copying a complete cassette, a CD or a CD program, it is advised to use the options, mentioned under point 2.
  2. To copy a CD or cassette, select sound source TAPE 2 and press the desired display button:
     - HIGH SPEED TAPE > TAPE, see chapter TAPE > TAPE DUBBING;
     - TAPE > TAPE, see chapter TAPE > TAPE DUBBING;
     - EDIT CD > TAPE, see chapter CD > TAPE DUBBING;
     - CD > TAPE, see chapter CD > TAPE DUBBING.

     By pressing one of these buttons, recording will start and RECORDING appears.

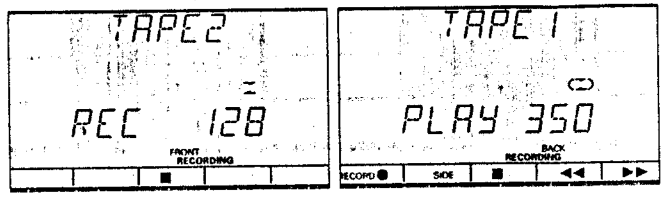
  During recording, RECORDING appears on the display.
- Press ■ to stop recording. The system returns to the selected sound source.

TAPE > TAPE DUBBING (copying from TAPE 1 to TAPE 2)

You can duplicate a recorded cassette by simultaneously playing the recorded cassette in TAPE 1 and making a recording of it in TAPE 2 using the dubbing function. Dubbing can be done at normal or high speed.

- Select TAPE 2 using the SOURCE SELECT button or the remote control. The source TAPE 2 appears on the display.
- Prepare the TAPE 2 deck for recording.
- Load the recorded cassette into TAPE 1 and close the cassette holder.
- If necessary, rewind both tapes to the beginning by selecting TAPE 1 or TAPE 2 and pressing ◀◀. After that, return to TAPE 2.
- Select the desired dubbing mode using the display buttons:
  - Press TAPE > TAPE to start copying at the normal speed. During copying, you will hear TAPE 1.
  - Press HIGH SPEED TAPE > TAPE to start high-speed copying. During high-speed copying, the sound cannot be heard.

  Both decks start running and RECORDING appears. Depending on the chosen sound source (TAPE 1 or TAPE 2), the display may show:



Recording will stop when one or both sides of the TAPE 2 cassette are full (depending on the chosen PLAY MODE).

- Press ■ to stop the dubbing at an earlier stage.

CD > TAPE RECORDING (copying a CD to TAPE 2)

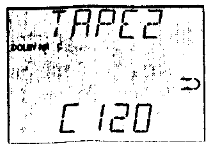
CD > TAPE recording

Using the CD > TAPE recording function, you can make a straight recording from a CD. If you programmed a selection of CD-titles, only the selected titles will be recorded.
At the end of the tape, recording is interrupted somewhere within the running track, the tape direction is reversed (FRONT/BACK) and the rest of the track and the remaining CD tracks are recorded on the second cassette side.

EDIT CD > TAPE recording

To prevent that at the end of the tape the recording is interrupted somewhere within a track, you can use the EDIT CD > TAPE function. Now, you can enter the playing time of the cassette and the system calculates, how many tracks will fit on each cassette side. When the last complete track is recorded on one cassette side, the CD player pauses, TAPE 2 records a silence until the end of the tape, reverses the tape direction (FRONT/BACK) and continues recording of the remaining tracks.

- Select TAPE 2 using the SOURCE SELECT button or the remote control. The source TAPE 2 appears on the display.
- Prepare the TAPE 2 deck for recording.
- Using the display buttons, select the desired dubbing mode:
  - CD > TAPE to start a straight copy of the CD or CD-program; RECORDING appears.
  - EDIT CD > TAPE for a calculated copy of the CD or CD-program: The display shows C60 (2x30 min. tape length). Press ◀ or ▶ to select the appropiate tape length (C60, C90, C100, C120, C30 or C46). Press EDIT CD > TAPE when the correct tape length is shown. The display shows A TIME and B TIME, indicating the calculated recording time for the front (A) and back (B) cassette side.After that, recording will start automatically and RECORDING appears.

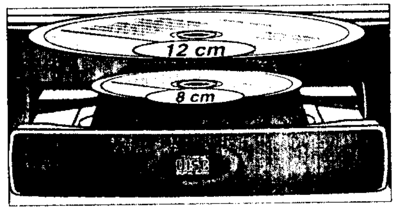


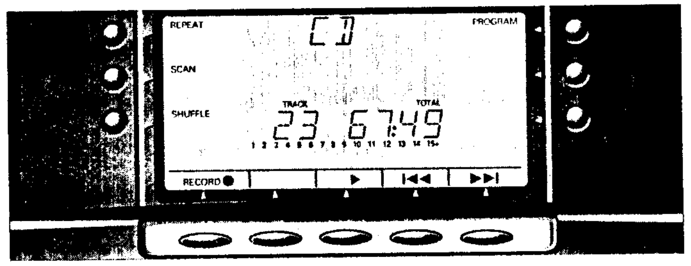
  When recording starts, the following happens:
  The CD player returns to the beginning of the CD (or CD program) and enters the pause mode.
  TAPE 2 starts recording and after a 7-second delay the CD will start. This is to ensure that the recording does not start until after the leader tape.
  Recording will stop when one or both sides of the cassette are full (depending on the chosen PLAY MODE) or when the CD player reaches the end of the CD or the end of the CD program.
- Press ■ to stop the dubbing at an earlier stage.

9. CD PLAYER

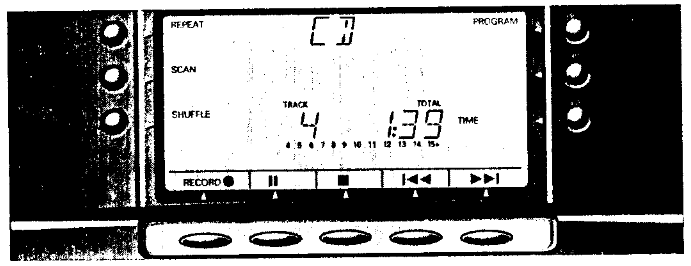
GENERAL PLAYBACK OF A CD

- Select CD using the SOURCE SELECT button or the remote control. The source CD appears on the display.
- Press OPEN/CLOSE ▲ on the CD player to open the CD compartment. The message OPEN appears on the display.
- Insert a CD, **printed side facing up**.
- Press OPEN/CLOSE to close the compartment (or push briefly against the front of the CD tray).
  The message CLOSING appears on the display, followed by READING for about 2 seconds; the number of tracks and the total playing time of the CD are shown on the display.
  The music calendar 1 ... 15+ shows how many tracks are on the CD; when more than 15 tracks are on the CD, 15+ appears





- Press ▶ to start playback. If still open, the CD tray closes as well. The display shows the track being played under TRACK. Its elapsed playing time is shown.
  When a track has been played, its number disappears from the music calendar.



- Using the display button TIME, the display shows either the elapsed time of the track, or the remaining time of the CD (or CD-program).
- Adjust the volume with VOLUME.
- To select an equalizer preset, press SOUND PRESETS once and select the required SOUND PRESET using the display buttons ◀ ▶. To leave the SOUND PRESET mode, press ■ or press SOUND PRESET again.
- Press ANALYZER to switch the spectrum analyzer or or off.
- To obtain a spatial sound effect (only possible with stereo signals), press SURROUND. The SURROUND symbol appears.
- To enhance the bass tones (volume-position-dependent), press DBB. The word DBB appears.
- By pressing |◀◀ or ▶▶|, you can jump to a previous or next track.
- You can interrupt playback by pressing II; PAUSE then lights up on the display. Press ▶ to continue playback.
- To stop playback, press ■ or OPEN/CLOSE ▲.
  After the last track, playback will stop automatically.

Automatic stop

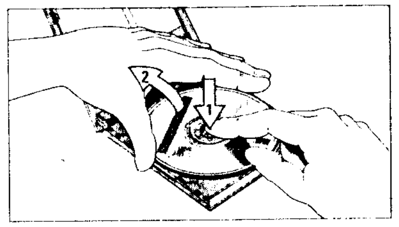
By selecting another sound source, the playing cassette deck is stopped or the playing CD player will enter the pause mode.

RECORD ●

- As soon as you press RECORD ●, the actual CD-sound will be recorded on TAPE 2, provided a cassette suitable for recording is loaded. If the CD was in the STOP-position, it will start automatically.
- To stop recording, press ■.

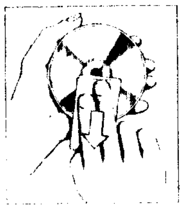
CD HANDLING

- Use only Digital Audio CDs. 8 cm CDs can be played as well.
- To take the CD out of its box easily, press the centre spindle while lifting the CD.



COMPACT
disc
DIGITAL AUDIO

- Never write on a CD or attach any sticker to the CD
- Always hold the CD at the edge and always store it in its box after use, label facing up.
- To remove dust and dirt, breathe on the CD and wipe it with a soft, lint-free cloth in a straight line from the centre towards the edge. Cleaning agents may damage the CD!
- Do not expose the CD to rain, moisture, sand, or to excessive heat e.g. from heating equipment or in motor cars parked in the sun.



ELAPSED OR REMAINING PLAYING TIME

During play, the display normally shows the elapsed playing time of the track currently playing.

- Press TIME when you want to know the remaining playing time of the entire CD or CD program.
- Press TIME again to return to the elapsed playing time of the track.

SELECTING ANOTHER TRACK

There are three options to select a track during playback or before starting playback:

On the remote control using the number buttons 0-9

- Select the desired track by pressing the corresponding number button(s). Track numbers consisting of two figures must be selected **within 2 seconds**, otherwise only the first number will be selected

Using |◀◀ and ▶▶| (or on the remote control |◀ or ▶|)

By pressing ***briefly*** the ▶▶| or |◀◀ button, you can jump to a next or previous title, or you can select a track before starting playback.

a. During PLAY

▶▶| - *go to the next track (title)*
You can jump to the next title by pressing ▶▶| once.
If you want to skip more than one track, press ▶▶| more than once until the display shows the desired track number.
|◀◀ - *go to the previous track (title)*
If you want to repeat the running title from the beginning, press PREVIOUS |◀◀ once.
If you want to repeat one of the previous titles, press |◀◀ more than once until the display shows the required track number.

b. In position STOP

In position STOP with a CD inserted you can select the desired title using |◀◀ or ▶▶| until the display shows the required track number. Press ▶ to start playback.

SEARCH FORWARD ▶▶| / BACKWARD |◀◀ DURING PLAY

You can search for a particular passage within a track. The CD is played partly and at high speed, however, the sound is still recognizable.

- ***During playback, keep*** the ▶▶| or |◀◀ button ***pressed.***
- Release the button as soon as you recognize the required passage: the CD will be played in the normal way from this passage.

9. CD PLAYER

SHUFFLE - PLAY IN RANDOM ORDER

SHUFFLE plays all tracks of the CD or CD program in a random order.

- From the PLAY- or STOP-position, press SHUFFLE.
  The message SHUFFLE appears and an at random selected track is played.
- If you press ⏮ or ⏭, an already played track is repeated (PREVIOUS) or one of the NEXT tracks (at random) is played.
- To leave the SHUFFLE-mode, press SHUFFLE again to return to normal play. SHUFFLE disappears from the display.
- To stop playback, press ■.

SCAN - PLAY THE FIRST 10 SECONDS OF EACH TRACK

When the scanning function is activated, it plays the first 10 seconds of each track of the CD or the CD program.

- Press SCAN before or during play to start the scanning.
  The display shows the message SCAN before each track, followed by a countdown of the first 10 seconds.
- To leave the SCAN mode, press SCAN again and you will hear the playing track completely.
- To stop playback, press ■

REPEAT

1x	REPEAT ALL
2x	REPEAT
3x	

It is possible to repeat the entire CD or CD-program or to repeat one particular track.

- Press REPEAT once or more than once until the desired option is displayed:
  - **REPEAT ALL** - to repeat the entire CD or CD-program continuously. When being in the stop mode, press ▶ to start playback.
  - **REPEAT** - to repeat the displayed track continuously. When being in the stop mode, select the track and press ▶ to start playback.
  - **no display indication** - REPEAT is switched off.
- To stop playback, press ■.

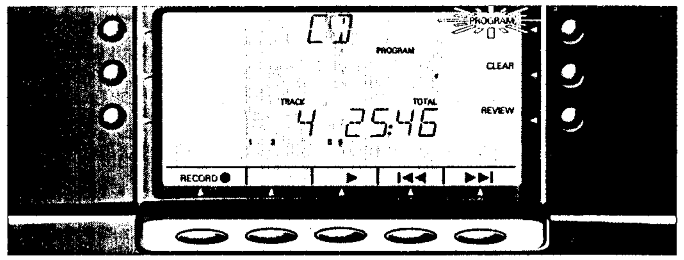
CD DISPLAY MESSAGES

NO DISC	– No AUDIO CD inserted • Insert an AUDIO CD
	– CD inserted upside down • Insert CD with label upwards
	– Laser lens is steamed up • Wait until lens has acclimatized
	– CD is damaged or dirty • Replace or clean the CD
OPEN or CLOSE	– During opening and closing the CD tray • No action
READING	– CD player is reading the contents list of the CD • No action
WRONG TRACK	– Selected track is not present on this CD • Select a correct track number
SCAN	– SCAN mode is activated • Leave this way or press SCAN again
SHUFFLE	– SHUFFLE mode is activated • Leave this way or press SHUFFLE again
REPEAT ALL	– 'Repeat the entire CD or CD-program' is active • Leave this way or press REPEAT again
REPEAT	– 'Repeat the running track' is active • Leave this way or press REPEAT again
SELECT TRACK	– Select the track for programming • Select a track or quit programming
FULL	– The memory for programming CD tracks is full • Leave this way or delete some tracks
PROGRAM CLEARED	– If the entire CD program has been cleared • No action
track nr + CLR	– This track number is cleared from the program • No action
CLR ALL (yes/no)	– Should the CD program be cleared ? • Confirm with YES or cancel with NO

CD PROGRAM - PROGRAMMING TRACK NUMBERS

You may store at most 20 tracks in the memory in the desired sequence. You may store any track more than once. When playing, you will only hear the stored titles in the selected sequence.
The display will show the message FULL if you exceed the maximum of 20 tracks.

Manual selecting
- Load the CD, but do not start playback yet.
- Select the desired track using the buttons ⏮ and ⏭ (or using the remote control) until the display shows the required track number.
- Store this track by pressing PROGRAM. The word PROGRAM appears in the display and the display button PROGRAM flashes for 2 seconds.

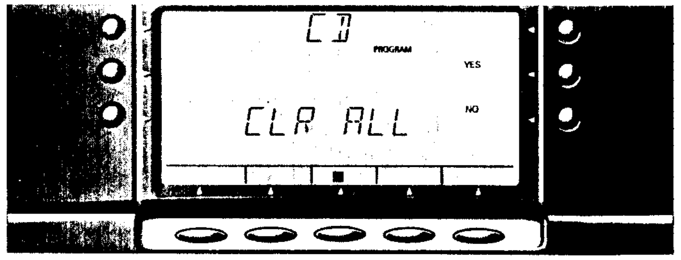


- Select and store in this way all desired titles.
  The display shows the total time of all programmed tracks.
  The music calendar shows which numbers have been stored.

Storing during PLAY, SCAN or SHUFFLE
- During normal PLAY or during SCAN you may store the running title by pressing PROGRAM once.
  The display shows the total time of all programmed tracks.
  The music calendar shows which numbers have been stored.

Checking the program
- Press REVIEW: the display and the music calendar will show in sequence all programmed track numbers.

Erasing a track or an entire program
- To erase one track from a program, select the ***programmed*** track to be erased using the buttons ⏮ and ⏭. Then press CLEAR; the display shows for 2 seconds the track number and the message CLR (cleared).
- To erase an entire CD program, there are two possibilities:
  - When a ***programmed*** track is displayed, press CLEAR ***twice***: the message CLR ALL (clear all) appears.
    Press YES to confirm; the message PROGRAM CLEARED appears.
    Press NO to clear only the programmed track.
  - When a ***not programmed*** track is displayed, press CLEAR ***once***: the message CLR ALL (clear all) appears.
    Press YES to confirm; the message PROGRAM CLEARED appears.
    Press NO to cancel.



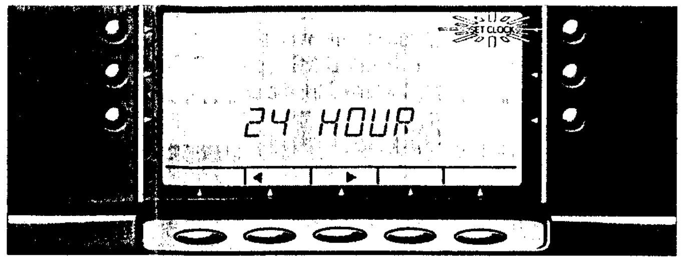
How to play the stored selection
- To play your selection, the CD-player should be in position STOP; then press ▶.
- Playing the selection in the SHUFFLE, SCAN and REPEAT mode is also possible.

10. CLOCK / TIMER

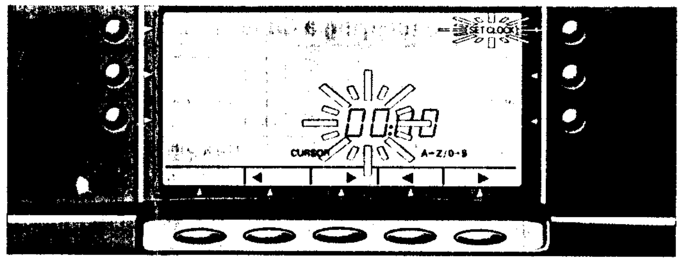
SET CLOCK - Setting the time-of-day

The clock shows the day of the week and the time. It can be set to a 12-hour or 24-hour clock format. In the standby mode, day and time are displayed, but the display illumination is switched off.
The clock display will flash if the time-of-day has not been set, or if the power supply was interrupted for longer than 10 minutes.

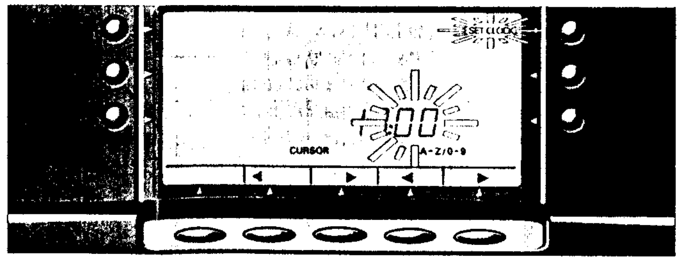
- Press the TIMER button to enter the TIMER mode.
  The timer display appears.
- Press SET CLOCK.
  The day appears.
- Press CURSOR ◀ ▶ until the correct day appears.
- Press SET CLOCK to store the day.
  The message 24 HOURS appears.



- Press CURSOR ◀ ▶ to select the 12-hour or 24-hour clock.
- Press SET CLOCK to store the clock format.
  The hours and minutes appear, the hours flash.
  When the 12 hour clock is selected, AM (before noon) or PM (afternoon) will appear.



- Press CURSOR ◀ ▶ to select the hours or the minutes. The chosen position will flash.



- Using A–Z / 0–9 ◀ ▶, adjust the hours and the minutes.
  When pressing the buttons shortly, the figures will change step-by-step. By pressing longer, the running speed will increase after a few seconds. When using the 12 hour clock, watch the AM/PM indication.
- Press SET CLOCK to store the settings and to leave the clock setting mode. The timer display appears again. The clock starts running.
- To leave the timer display, press TIMER again or select a sound source or STANDBY.

SET RECORD TIMER - Radio recording start and stop time

- Load the cassette to be recorded into TAPE 2. Ensure that the cassette tabs are not broken out.
- Press the TIMER button to enter the TIMER mode.
  The timer display appears.
- Press SET RECORD TIMER.
  SET RECORD TIMER flashes and the radio presets appear.
- Press PRESET ◀ ▶ to select the desired radio station.
- Press SET RECORD TIMER to store the radio preset.
  The message ON and a time appears, the hours flash. The ***recording start time*** must be entered.
- Press CURSOR ◀ ▶ to select the hours or the minutes. The chosen position will flash.
- Using A–Z / 0–9 ◀ ▶, adjust the hours and the minutes.
- Press SET RECORD TIMER to store the start time.
  The message OFF and a time appears, the hours flash. The ***recording stop time*** must be entered.
- Using CURSOR ◀ ▶ and A–Z / 0–9 ◀ ▶, adjust the hours and minutes.
- Press SET RECORD TIMER to store the settings. The above display appears again. The timer is activated and the word TIMER appears in the display.
- To switch off or re-activate a timer function, press TIMER ON/OFF several times until the required indication appears:
  The message PLAY (playback) and the programmed start time for activating the PLAY TIMER;
  The message REC (recording) and the programmed start time for activating the REC TIMER;
  OFF for switching the timer off.
  After approx. 1.5 second, the chosen function is activated.
- To leave the timer display, press ■ or press TIMER again.

SET PLAY TIMER - Playback start time

Several options are possible:
- the tuner wakes up and is tuned to a selected preset station;
- the CD player wakes up and starts playing a selected track;
- a cassette deck wakes up and starts playing;

- Press the TIMER button to enter the TIMER mode.
  The timer display appears.
- Press SET PLAY TIMER.
  SET PLAY TIMER flashes and the selected SOURCE appears.
- Press ◀ ▶ to select the desired sound source. If CD or TAPE is selected, load a CD or a cassette.
  - When TUNER is selected, press PRESET ◀ ▶ to select the desired radio station.
  - When CD is selected, press TRACK ◀ ▶ to select the desired CD track.
- Press SET PLAY TIMER to store the selected source and the selected radio preset or CD track.
  ON and a time appears, the hours flash. The ***start time*** must be entered.
- Press CURSOR ◀ ▶ to select the hours or the minutes. The chosen position will flash.
- Using A–Z / 0–9 ◀ ▶, adjust the hours and the minutes.
- Press SET PLAY TIMER to store the settings. The timer display appears again. The timer is activated and the word TIMER appears in the display.
- To switch off or re-activate a timer function, press TIMER ON/OFF several times until the required indication appears:
  The message PLAY (playback) and the programmed start time for activating the PLAY TIMER;
  The message REC (recording) and the programmed start time for activating the REC TIMER;
  The message OFF for switching the timer off.
- To leave the timer display, press ■ or press TIMER again.

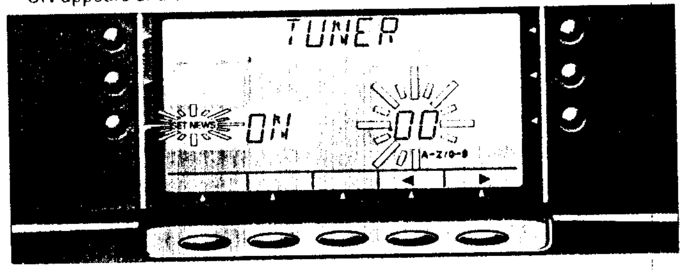
10. CLOCK / TIMER

SET NEWS

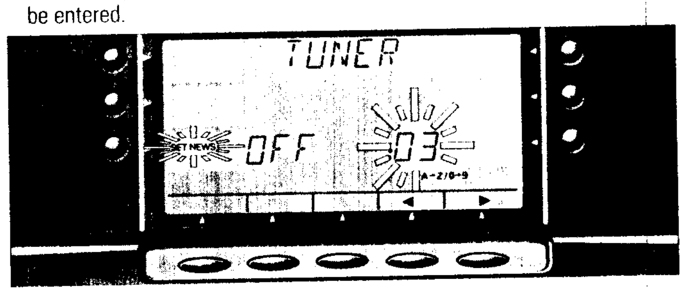
The news function will interrupt any playing source and switch to a programmed radio station in order to listen to the news. You have to programme the desired radio news station and the start/stop time (only the minutes).

Example:
You programmed a radio news station, a start time of :00 minutes, a stop time of :03 minutes and you activated the news timer.
No matter if you are listening to a CD, a cassette or another radio station, the system will switch the next hour at :00 minutes to the radio news station for 3 minutes and, after that, return to the previous sound source.

- Press the TIMER button to enter the TIMER mode.
  The timer display appears.
- Press SET NEWS.
  SET NEWS flashes and the radio presets appear.
  Press PRESET ◀ ▶ to select the desired radio news station.
- Press SET NEWS.
  ON appears and the minutes flash. The ***start minute*** must be entered.



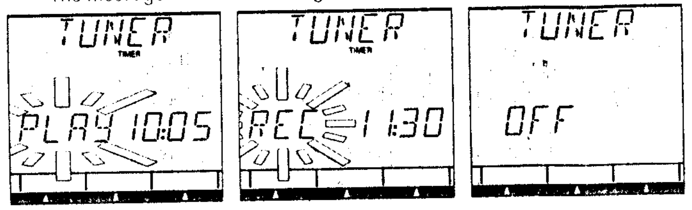
- Using A–Z / 0–9 ◀ ▶, adjust the the starting minute.
- Press SET NEWS.
  The message OFF appears and the minutes flash. The ***stop minute*** must be entered.



- Using A–Z / 0–9 ◀ ▶, adjust the stop minute.
- Press SET NEWS to store the settings. The timer display appears again.
  The news timer is activated and the word NEWS appears in the display.
- To switch off or re-activate the NEWS function, press NEWS ON/OFF until the required indication appears:
  The message NEWS and the programmed start time for activating the NEWS timer;
  The message OFF for switching the NEWS timer off.
  After approx. 1.5 second, the chosen function is activated.
- To leave the timer display, press ■ or press TIMER again.

TIMER ON/OFF

- Press the TIMER button to enter the TIMER mode.
  The timer display appears.
- To switch off or re-activate a timer function, press TIMER ON/OFF several times until the required indication appears:
  - The message PLAY (playback) and the programmed start time for activating the PLAY TIMER;
  - The message REC (recording) and the programmed start time for activating the REC TIMER;
  - The message OFF for switching the timer off.



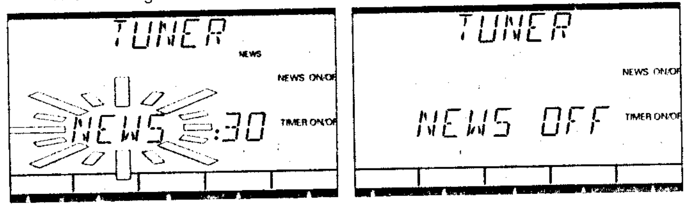
After approx. 1.5 second, the chosen function is activated.

- To leave the timer display, press ■ or press TIMER again.

Note: When operating the system at the moment a timer should become active, the timer function is cancelled.

NEWS ON/OFF

- Press the TIMER button to enter the TIMER mode.
  The timer display appears.
- To switch off or re-activate the NEWS function, press NEWS ON/OFF until the required indication appears:
  - The message NEWS and the programmed start time for activating the NEWS timer;
  - The message NEWS OFF for switching the NEWS timer off.



- To leave the timer display, press ■ or press TIMER again.

Note: When operating the system at the moment a timer should become active, the timer function is cancelled.

TIMER DISPLAY MESSAGES

MON TUE WED THU FRI SAT SUN	– Monday to Sunday, flashes during SET CLOCK	• Select with CURSOR ◀ ▶, confirm with SET CLOCK
24 HOUR or 12 HOUR	– Clock format	• Select with CURSOR ◀ ▶, confirm with SET CLOCK
TIMER CANCELLED	– Recording is active	• Leave this way or stop recording using ■
PLAY (flashing) + time	– PLAY TIMER + start time selected	• Leave this way or press TIMER ON/OFF
REC (flashing) + time	– RECORD TIMER + start time selected	• Leave this way or press TIMER ON/OFF
OFF	– PLAY and RECORD TIMER switched off	• Leave this way or press TIMER ON/OFF
NEWS (flashing) + minutes	– NEWS TIMER + start time selected	• Leave this way or press NEWS ON/OFF
NEWS OFF	– NEWS TIMER switched off	• Leave this way or press NEWS ON/OFF

11. MAINTENANCE

SYSTEM MAINTENANCE

- The mechanical parts of the CD player and the cassette decks contain self-lubricating bearings and must not be oiled or lubricated.
- A chamois leather slightly moistened with water is sufficient for cleaning the system.
- Do not use cleaning agents containing alcohol, spirits, ammonia or abrasives.
- Do not leave the system for any length of time in direct sunlight or other places where high temperatures can occur, such as in the vicinity of heating apparatus.
- Do not expose the system to humidity or rain.

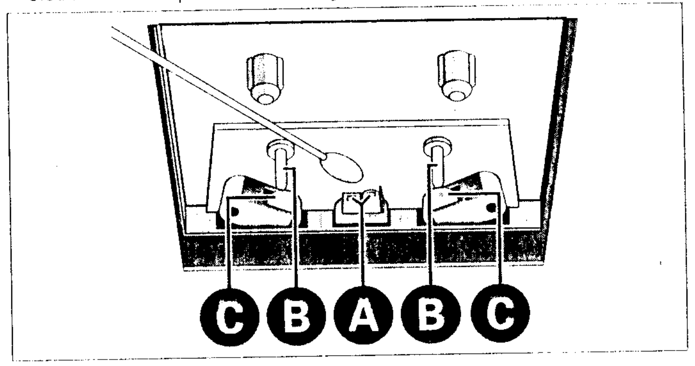
CD-PLAYER MAINTENANCE

- The lens may cloud over if the CD player is moved from cold to warm surroundings. The CD player will not start. Do not clean the lens, but give the player some time to acclimatise.

CASSETTE DECK MAINTENANCE

To ensure a good recording and playback quality, clean the indicated parts Ⓐ Ⓑ Ⓒ after every 50 hours of operation or, on average, once a month.

- Use a cotton bud slightly moistened with alcohol or a special head cleaning fluid.
- Clean the rubber pressure rollers Ⓒ, the capstans Ⓑ and the heads Ⓐ.



- Cleaning of the heads Ⓐ can also be done by playing a cleaning cassette through once.

12. TECHNICAL DATA

TECHNICAL DATA

(subject to modification)

Amplifier

• Output power:	2 x 40 WRMS / 6 Ω / THD 10% at 1 kHz
• Power bandwidth:	20 - 40 000 Hz
• Frequency response:	40 - 20 000 Hz
• Signal-to-noise ratio:	≥ 75 dBA (IEC)
• Stereo separation:	≥ 50 dB (IHF)
• Input sensitivity	
PHONO MD:	2.5 mV
AUX PLAY:	250 mV
Microphone:	3.5 mm socket, 1 mV *(not on all versions)*
• Outputs	
AUX REC:	250 mV
Loudspeakers:	6 Ω
Headphones:	3.5 mm socket, 8 Ω - 1 000 Ω (5 Vemk - 120 Ω)

Tuner

• FM wave range:	87.5 - 108 MHz
• MW wave range:	522 - 1611 kHz
• LW wave range:	153 - 279 kHz
• Sensitivity at 75 Ω	
mono, 26 dB signal-to-noise ratio:	1.2 µV
stereo, 46 dB signal-to-noise ratio:	45 µV
• Selectivity:	30 dB
• Total harmonic distortion:	≤ 1.1%
• Frequency response:	63 - 14 000 Hz (± 3 dB)
• Signal-to-noise ratio:	65 dBA (mono)

CD player

• Frequency range:	20 - 20 000 Hz
• Signal-to-noise ratio:	90 dB
• Dynamic range:	90 dB
• Channel separation:	80 dB
• Total harmonic distortion:	80 dB
• Conversion:	Bitstream

Tape decks

• Frequency range	
CrO2 tape (type II):	40 - 16 000 Hz (± 5 dB)
Normal tape (type I):	40 - 16 000 Hz (± 5 dB)
• Signal-to-noise ratio (without Dolby NR)	
CrO2 tape (type II):	56 dBA
Normal tape (type I):	55 dBA
• Wow and flutter:	≤ 0,2% DIN

Speaker

• System:	3-way double bass reflex
• Impedance:	6 Ohms
• Bass speaker:	7 inch long-stroke
• Mid/treble speaker:	2 inch ferrofluid cone
• Upper treble:	piezo tweeter

General

• Dimensions (w x h x d):	
FR 66 receiver:	250 x 176 x 250 mm
CCD 66 CD player/Cassette deck:	250 x 176 x 250 mm
FB 66 speakers:	200 x 352 x 250 mm
• Weight (without speakers):	approx. 9 kg
Weight including speakers:	approx. 19 kg

13. TROUBLESHOOTING

TROUBLESHOOTING

If a fault occurs, first check the points listed below before taking the system for repair.
If you are unable to remedy a problem by following these hints, consult your dealer or service centre.
If any repair is needed, always deliver the complete system (not only one unit) at your dealer or service centre.

WARNING
Under no circumstances should you try to repair the system units yourself, as this would invalidate the guarantee.

PROBLEM	POSSIBLE CAUSE	REMEDY
No power	– Mains lead is not connected securely	• Connect the mains lead securely
	– Flat cable is not (or wrongly) connected	• Connect the flat cables securely
No sound	– VOLUME is not turned up	• Turn up the VOLUME
	– Headphones are connected	• Disconnect headphones
	– Speakers are not (or wrongly) connected	• Connect the speakers securely
Bad sound	– Unsuited speakers are used	• Use recommended speakers, impedance 6 Ohms
	– Badly matching equalizer setting for the given type of music	• Choose a matching equalizer setting for the given type of music
No sound on left or right side	– Speaker wrongly connected	• Connect speaker properly
Reversed left and right sound	– Speakers are wrongly connected	• Connect speakers properly, L to left, R to right
System does not react to operation of any button	– Electrostatic discharge	• Switch off the units and disconnect the mains plugs. Connect again after a few seconds.
Severe radio hum or noise	– FM aerial not connected securely	• Connect FM aerial properly
	– Loose connections	• Restore connections
	– Tuner too close to TV, VCR or computer	• Increase the distance
	– FM aerial cable too near to flat cable	• Move FM aerial cable away from flat cable
The CD skips tracks	– CD is damaged or dirty	• Replace or clean the CD
Bad sound quality from cassette	– Dust and dirt on the heads, capstans or pressure rollers	• Clean the heads, capstans and pressure rollers, see chapter 'Maintenance'
Remote control does not operate properly	– Distance to the system is too large	• Reduce the distance
	– Remote control batteries incorrectly inserted	• Insert batteries properly
	– Remote control batteries exhausted	• Replace batteries
	– Wrong sound source selected	• Select correct sound source.

GENERAL DISPLAY MESSAGES

MAGIC - NEW MINI SYSTEM - EVOLUTIONARY DESIGN	– Demonstration mode is active	• Leave this way or undo, see INTRODUCTION
NO TAPE	– No cassette inserted	• Insert a cassette
	– CCD unit (CD/TAPE) is not connected	• Connect CCD-unit using the flat cable
NO DISC	– No AUDIO CD inserted	• Insert an AUDIO CD
	– CD inserted upside down	• Insert CD with label upwards
	– Laser lens is steamed up	• Wait until lens has acclimatized
	– CD is damaged or dirty	• Replace or clean the CD
SELECT SOURCE	– Desired source is unknown	• Select the source using SOURCE SELECT
PHONO DCC CDI TV VCR AUX	– Possible sources connected to PHONO and AUX PLAY	• To select names, see SYSTEM SET-UP
JAZZ POP ROCK CLASSIC OPTIMAL FLAT	– The indicated equalizer setting is selected	• Select with ◀ ▶, confirm with ■
STOP TAPE 1 or STOP TAPE 2	– Cannot enter the function from this mode	• Press ■ to stop and repeat the command
GO TO STOP	– Cannot enter the function from this mode	• Press ■ to stop and repeat the command
AUTOPLAY (yes/no)	– System set-up menu	• Press YES or NO or quit using ■,see SYSTEM SET-UP
SOURCES (yes/no)	– System set-up menu to select external sources	• Press YES or NO or quit using ■,see SYSTEM SET-UP
TRADE ON or TRADE OFF	– Demonstration mode activated or not	• Leave this way or undo, see INTRODUCTION
LW ON or LW OFF	– LW wave band is available or not available	• Leave this way or undo,see SYSTEM SET-UP
MW 9 KC or MW 10 KC	– AM/MW tuning grid is set to 9 kHz or 10 kHz	• Leave this way or undo,see SYSTEM SET-UP
OPTIMAL or NO OPTIM	– OPTIMAL equalizer setting is available or not	• Leave this way or undo, see SYSTEM SET-UP

SERVICE TEST PROGRAM

GENERAL

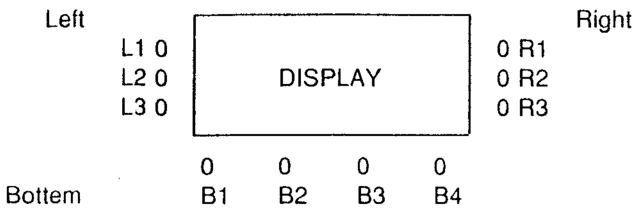
With this testprogram the following parts can be checked

1	Quartz 32kHz 8MHz	6	Eeprom clear
2	Key	7	Tuner
3	Display	8	CD
4	Volume	9	Tape
5	Eeprom		

By pressing the **SOURCE** and **DBB** keys and inserting the mains plug the service program is entered
In the service mode the display shows the loaded version of the µP 66 xxx-S (xxx is the software version)

To leave the service mode disconnect the set of the mains.

Key definition



Left
Right
L1 0
L2 0
L3 0
DISPLAY
0 R1
0 R2
0 R3
0 0 0 0
Bottem
B1 B2 B3 B4

1 QUARTZ TEST:

-Press the **L1** button to start this testprogram.
A signal of 4096Hz is put on the osc output of connector 1450-1. The display shows **Q LO** .Press again **L1** button,now a signal of 3906.25kHz is put on the osc output of connector 1450-1.The display shows **Q HI**.

-To leave this test press again **L1**. The display shows again the loaded version of the µP.

2 KEY TEST:

-Press the **L3** button to start this testprogram.

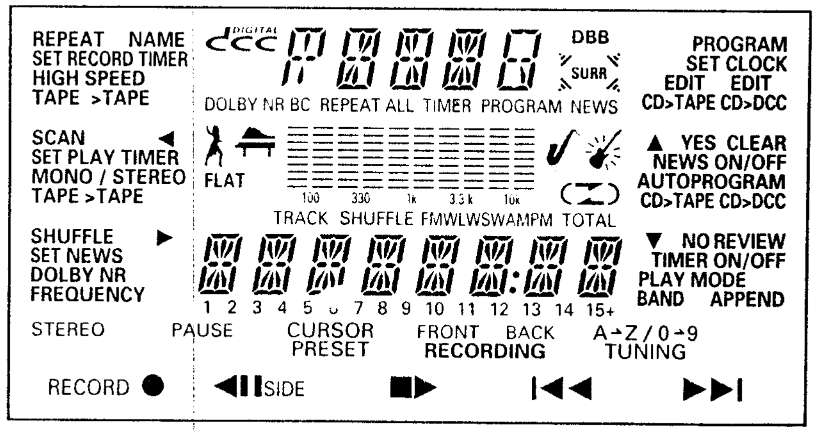
Press Button	Display Shows
L1	19
L2	14
L3	09
R1	02
R2	07
R3	12
B1	03
B2	20
B3	15
B4	10
B5	05

Press Button	Display Shows
SOURCE SELECT	01
ANALYZER	11
SOUND PRESETS	06
SURROUND	16
TIMER	18
DBB	13
STANDBY	08
OPEN/CLOSE	21

-To leave this test press **L3** again.

3 DISPLAY TEST:

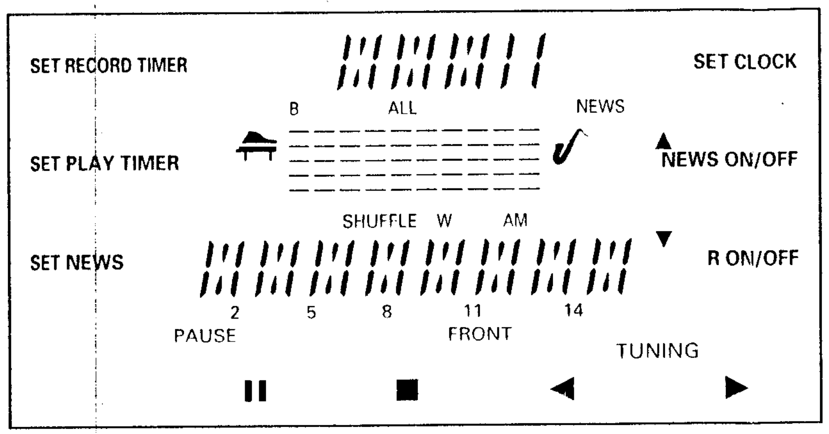
-Press the **ANALYZER** button to start this testprogram.
The display shows: see pattern 1



REPEAT NAME
SET RECORD TIMER
HIGH SPEED
TAPE >TAPE
DIGITAL dcc
DBB
SURR
PROGRAM
SET CLOCK
EDIT EDIT
CD>TAPE CD>DCC
DOLBY NR BC REPEAT ALL TIMER PROGRAM NEWS
SCAN ◀
SET PLAY TIMER
MONO / STEREO
TAPE >TAPE
FLAT
100 330 1k 3.3k 10k
▲ YES CLEAR
NEWS ON/OFF
AUTOPROGRAM
CD>TAPE CD>DCC
TRACK SHUFFLE FMWLWSWAMPM TOTAL
SHUFFLE ▶
SET NEWS
DOLBY NR
FREQUENCY
▼ NO REVIEW
TIMER ON/OFF
PLAY MODE
BAND APPEND
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15+
STEREO
PAUSE
CURSOR
PRESET
FRONT BACK
RECORDING
A→Z / 0→9
TUNING
RECORD ●
◀II SIDE
■▶
I◀◀
▶▶I

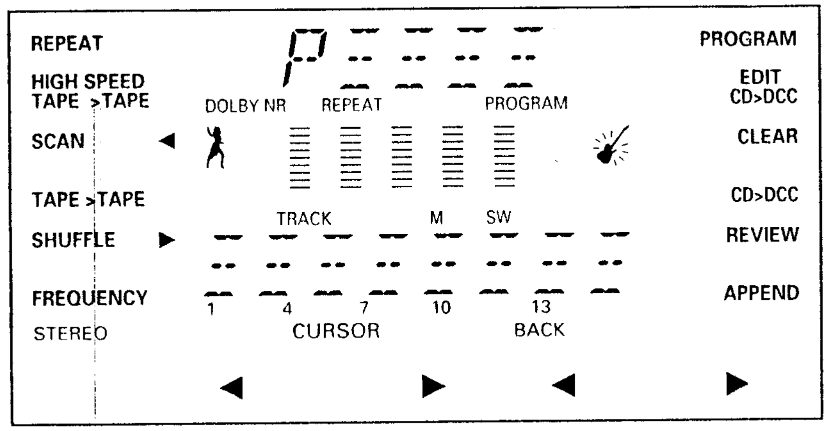
Pattern 1

-To go to pattern 2 press **ANALYZER** button again.


SET RECORD TIMER
SET CLOCK
B
ALL
NEWS
SET PLAY TIMER
NEWS ON/OFF
SHUFFLE
W
AM
SET NEWS
R ON/OFF
2
5
8
11
14
PAUSE
FRONT
TUNING

Pattern 2

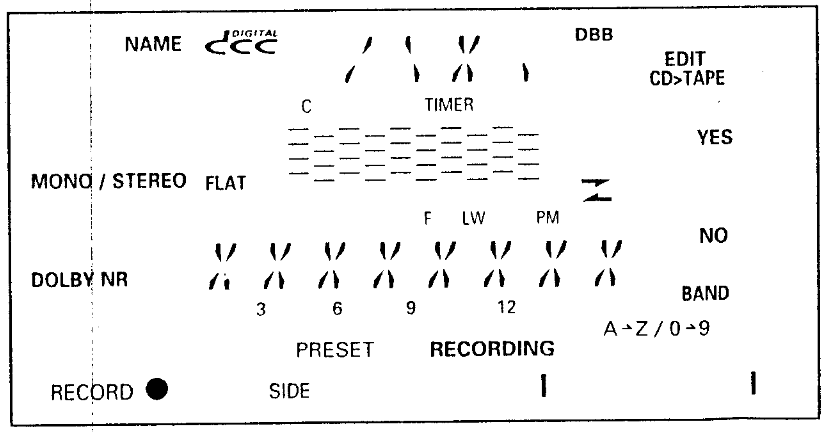
-To go to pattern 3 press **ANALYZER** button again.


REPEAT
PROGRAM
HIGH SPEED TAPE >TAPE
EDIT CD>DCC
DOLBY NR
REPEAT
PROGRAM
SCAN
CLEAR
TAPE >TAPE
CD>DCC
TRACK
M
SW
SHUFFLE
REVIEW
FREQUENCY
APPEND
1
4
7
10
13
STEREO
CURSOR
BACK

Pattern 3

-To go to pattern 4 press **ANALYZER** button again.

-To leave this test press **ANALYZER** button again.


NAME
DIGITAL
DBB
EDIT CD>TAPE
C
TIMER
YES
MONO / STEREO
FLAT
F
LW
PM
NO
DOLBY NR
BAND
3
6
9
12
A→Z / 0→9
PRESET
RECORDING
RECORD
SIDE

Pattern 4

4 VOLUME TEST:

volume up press **B3**
-With this test the volume is controlled, without remote control keys. This key is available when no specific test mode is selected.
-While keeping this key pressed, the audio signal is changing and the motor turns in the upward direction.
The display shows 'VOL UP'.

volume down press **B2**
-With this test the volume is controlled, without remote control keys.This key is available when no specific test mode is selected.
-While keeping this key pressed, the audio signal is changing and the motor turns in the downward direction.
The display shows 'VOL DOWN'.

5 EEPROM TEST:

-Press the **SURROUND** button to start this testprogram.

The eeprom is tested with 2 automatic write and read sequences in one location of the eeprom. If the test is passed correctly the display shows 'PROM OK' for 2 sec.if not the display shows 'PROM ERR'. The information PROM OK is available 150 msec after activating this test.

6 EEPROM CLEAR TEST:

-Press the **DBB** button to start this testprogram.

With this test the eeprom is cleared automatically. Each routine loads its own eeprom area with the default values. The display shows 'CLR PROM' for 2 sec.

7 TUNER TEST:

-Press the **R1** button to start this testprogram.
With this test service frequencies are available under the presets.The customer presets are not deleted.
When the set is disconnected from the mains, and insert the mains again, the customer presets are back actived.

preset	Europe "EUR"	EastEur. "EAS" *	USA "USA"	Oversea "OSE"	Os+SW "OSS"	Eur+SW "EUS" *
1	87.5	65.81	87.5	87.5	87.5	87.5
2	108.0	74.00	108.0	108.0	108.0	108.0
3	98.0	87.5	98	98.0	98.0	98.0
4	89.7	108.0	89.7	89.7	89.7	89.7
5	93.0	98.0	93.0	93.0	93.0	93.0
6	104.9	89.7	104.9	104.9	104.9	104.9
7	522	93	530	530	530	522
8	1611	104.9	1710	1710	1710	1611
9	540	522	540	540	540	540
10	549	1611	550	550	550	549
11	558	540	560	560	560	558
12	1494	549	1500	1500	1500	1494
13	153	558	1600	1600	1600	153
14	279	1494	1000	1000	3900	279
15	156	153			12100	156
16	198	279			4250	198
17	270	156			8000	270
18	999	198			11900	5900
19		270			1000	18100
20		999				6200
21						17000
22						12000
23						999

-To go to the next service test, please the set in service mode again.

8 CD TEST:

-Press the **R2** button to start this testprogram.

Level 1
Display shows: 'CD _XX' {XX means version number }
Press B5: the laser unit moves out, the display shows "LASER".
-Press B3: go to level 2
-Press B2: exit CD test, switch back to main Service menu

Level 2
Display shows: "FOCUS"
Focus movement starts (focus lens moves up and down)
-Press B3: go to level 3 (focus is still on moving)
-Press B2: stop focus and return to level 1

Level 3
Display shows: "DISC"
Start disc motor
-Press B3: go to level 4 (disc motor is still on, and focus is still on moving)
-Press B2: stop disc motor and return to level 2

Level 4
Display shows: "RADIAL"
Radial is switched on.
-Press B2: switch off radial and return to level 3

To go out this test press 4 times on B2 (level3 ->level2 -> level1 -> out of CD test)

The following Error numbers are available if the test mode is left by pressing STANDBY:

CD Error number	CD Error
Er 1002	Focus error
Er 1007	Subcode error, no valid subcode
Er 1008	TOC error, out of lead-in area while reading TOC
Er 1009	CD4 + decoder error
Er 1010	Radial error
Er 1012	Fatal sledge error
Er 1013	Turnable motor error
Er 1030	Too many grooves to jump
Er 1031	Search error
Er 1032	Search binary error
Er 1033	Search index error
Er 1034	Search time error
Er 1037	Selector error
Er 1050	Edit calculation error
Er 1051	Edit track count error
Er 1052	Edit Optimal error

9 TAPE TEST:

-Press the **R3** button to start this testprogram.

Level 1:

Display shows 'TA__XX', this is the version number of the tape brick.

400 Hz are available on the control part of Tape deck brick. Pin 35 IC7793

-Press B3: go level 2

-Press B2: exit tape test, switch back to main Service menu

Level 2:

The display shows 'COIL A' while the coil of deck A is activated.

After 8 seconds the display shows 'COIL B' while the coil of deck B also is activated.

After 8 sec the display shows 'COIL' The coil goes to no activated position.

Before to go to level 3, place a cassette in Deck A and Deck B

-Press B3: go level 3

-Press B2: go to previous level 1

Level 3:

Display shows 'PLAY A'.

Deck A is in normal play (deck B is not working).

-Press B3: go to level 4

-Press B2: go to previous level 2

Level 4:

Display shows 'FAST A'.

Deck A is in fast play (deck B is not working).

-Press B3: go to level 5

-Press B2: go to previous level 3

Level 5:

Display shows 'PLAY B'.

Deck B is in normal play (deck A is not working).

-Press B3: go to next level 6

-Press B2: go to previous level 4

Level 6:

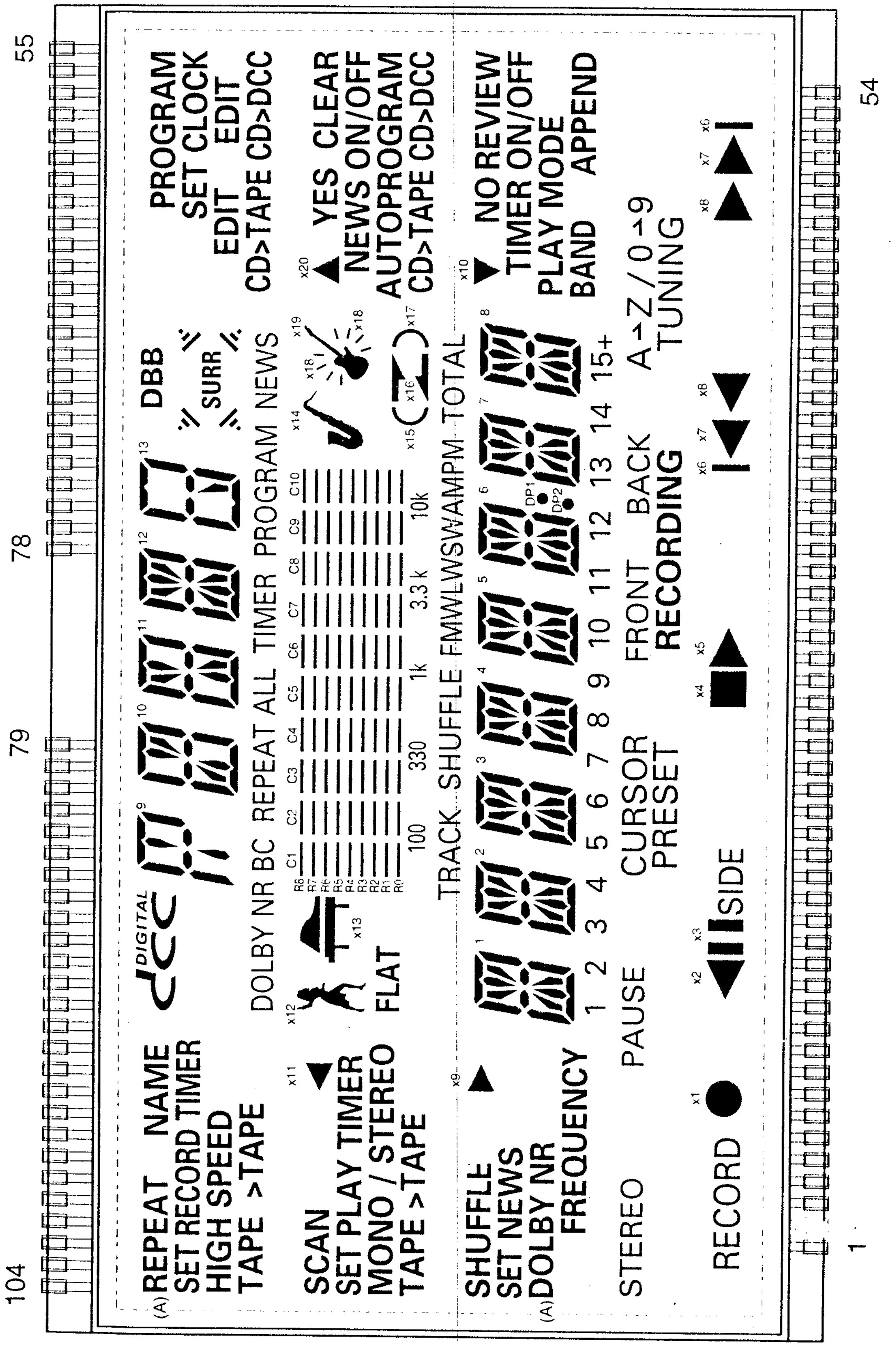
Display shows 'FAST B'.

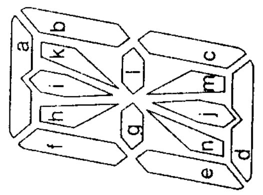
Deck B is in fast play (deck A is not working).

-Press B3: exit tape test, switch back to main Service menu

-Press B2: go to previous level 5

LCD DISPLAY PIN-OUT LIST


55
78
79
104
54
1
PROGRAM
SET CLOCK
EDIT EDIT
CD>TAPE CD>DCC
YES CLEAR
NEWS ON/OFF
AUTOPROGRAM
CD>TAPE CD>DCC
NO REVIEW
TIMER ON/OFF
PLAY MODE
BAND APPEND
A-Z / 0-9
TUNING
DBB
SURR
DIGITAL
DOLBY NR BC REPEAT ALL TIMER PROGRAM NEWS
FLAT
100 330 1k 3.3k 10k
TRACK SHUFFLE FMWLWSWAMPM TOTAL
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15+
PAUSE CURSOR FRONT BACK
PRESET RECORDING
SIDE
REPEAT NAME
SET RECORD TIMER
HIGH SPEED
TAPE >TAPE
SCAN
SET PLAY TIMER
MONO / STEREO
TAPE >TAPE
SHUFFLE
SET NEWS
DOLBY NR
FREQUENCY
STEREO
RECORD
(A)


a
b
c
d
e
f
g
h
i
j
k
l
m
n

PINNUMBER	COM 1	COM 2	COM 3	COM 4
1	COM 1	--	--	--
2	--	COM 2	--	--
3	--	--	COM 3	--
4	--	(A)BOLBY NR	--	--
5	STEREO	FREQUENCY	RECORD x1	--
6	--	--	--	COM 4
7	g1	f1	e1	PAUSE
8	n1	h1	d1	a1
9	m1	j1	1	k1
10	c1	l1	2	b1
11	g2	f2	e2	TRACK
12	n2	h2	d2	a2
13	m2	j2	3	k2
14	c2	l2	4	b2
15	g3	f3	e3	SHUFFLE
16	n3	h3	d3	a3
17	m3	j3	5	k3
18	c3	l3	6	b3
19	COM 1	--	--	--
20	x2	--	--	--
21	--	COM 2	--	--
22	--	--	--	x3
23	CURSOR	PRESET	7	SIDE
24	g4	f4	e4	F
25	n4	h4	d4	a4
26	m4	j4	8	k4
27	c4	l4	9	b4
28	g5	f5	e5	M
29	n5	h5	d5	a5
30	m5	j5	10	k5
31	c5	l5	FRONT	b5
32	x4	x5	RECORDING	--
33	g6	f6	e6	LW
34	n6	h6	d6	a6
35	m6	j6	11	k6
36	c6	l6	12	b6
37	DP2	DP1	BACK	SW
38	g7	f7	e7	AM
39	n7	h7	d7	a7
40	m7	j7	13	k7
41	c7	l7	14	b7
42	g8	f8	e8	PM
43	n8	h8	d8	a8
44	m8	j8	15+	k8
45	x6	x7	TUNING	x8
46	--	--	--	COM 4
47	c8	l8	A-Z/0-9	b8
48	REVIEW	--	BAND	TOTAL
49	--	--	COM 3	--
50	TIME	PLAY MODE	CLEAR	EDIT CD>DCC
51	COM 1	--	--	--
52	--	COM 2	--	--
53	--	--	--	SET CLOCK
54	CD>DCC APPEND	NEWS ON/OFF R ON/OFF	YES , NO	PROGRAM
55	--	--	COM 3	--

PINNUMBER	COM 1	COM 2	COM 3	COM 4
56	--	--	--	COM 4
57	--	--	--	EDIT CD>TAPE
58	CD>TAPE	AUTOPROGRAM	x10,x20	W
59	x15	x16	x17	C7,C8 R0
60	x14	x18	x19	C9.C10 R0
61	C4 R3	C4 R2	C4 R1	C4 R4
62	C5 R3	C5 R2	C5 R1	C5 R4
63	C6 R3	C6 R2	C6 R1	C6 R4
64	C10 R3	C10 R2	C10 R1	C10 R4
65	C9 R3	C9 R2	C9 R1	C9 R4
66	C8 R3	C8 R2	C8 R1	C8 R4
67	C7 R3	C7 R2	C7 R1	C7 R4
68	SURR	NEWS	PROGRAM	DBB
69	g13.l13	c13	m13	b13
70	f13	e13	d13	a13
71	l12	c12	TIMER	b12
72	j12	m12	ALL	k12
73	h12	n12	d12	a12
74	f12	g12	e12	--
75	--	--	--	COM 4
76	COM 1	--	--	--
77	--	COM 2	--	--
78	--	--	COM 3	--
79	--	COM 2	--	--
80	COM 1	--	--	--
81	b11	l11 . g11	c11	a11
82	j11	m11 , h11	d11	e11,f11
83	a10	e10 , f10	REPEAT	b10.c10
84	k10,n10	j10	d10	g10,l10
85	a9	j9	C	b9,e9,f9,g9,l9
86	--	DOLBY NR	B	DIGITAL DCC
87	C10 R6	C10 R7	C10 R8	C10 R5
88	C9 R6	C9 R7	C9 R8	C9 R5
89	C8 R6	C8 R7	C8 R8	C8 R5
90	C7 R6	C7 R7	C7 R8	C7 R5
91	C6 R6	C6 R7	C6 R8	C6 R5
92	C5 R6	C5 R7	C5 R8	C5 R5
93	C4 R6	C4 R7	C4 R8	C4 R5
94	C3 R6	C3 R7	C3 R8	C3 R5
95	C2 R6	C2 R7	C2 R8	C2 R5
96	C1 R6	C1 R7	C1 R8	C1 R5
97	C1 R3	C1 R2	C1 R1	C1 R4
98	C2 R3	C2 R2	C2 R1	C2 R4
99	C3 R3	C3 R2	C3 R1	C3 R4
100	NAME	x13	x12	C1,C2 R0
101	(A)REPEAT	FLAT	SET RECORD TIMER	C3,C4 R0
102	--	--	COM 3	--
103	SCAN,SHUFFLE	x9 , x11	HIGH SPEED TAPE>TAPE	C5,C6 R0
104	SET PLAY TIMER	SET NEWS	TAPE>TAPE MONO/STEREO	100 330 1k 3.3k 10k

The following pins are connected externally:

Pin 4 to 48
Pin 5 to 53
Pin 20 to 86

Pin 22 to 32
Pin 57 to 74
Pin 1 to 19,51,76,80

Pin 2 to 21,52,77,79
Pin 3 to 49,55,78,102
Pin 6 to 46,56,75

DISMANTLING FRONT and VOLUME BOARD

1 Remove
2x M3X6 Taptite Torx screw
2x M3X12 Plastite Torx screw
7x M3X6 Taptite Torx screw

2 Remove cover as shown in fig 1 arrow 1

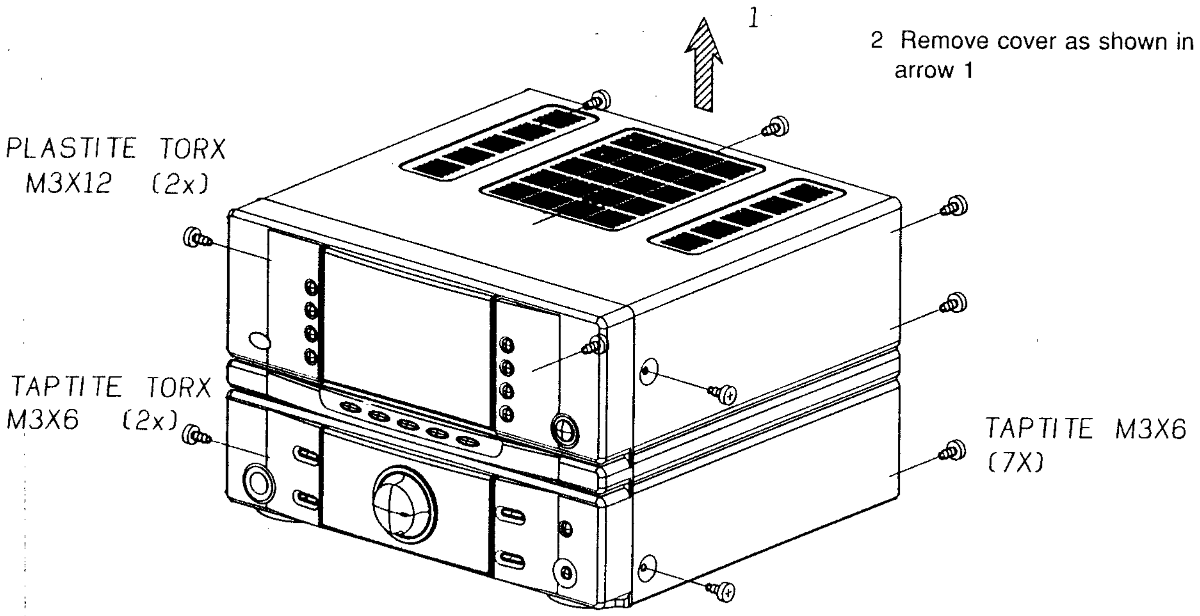

1
PLASTITE TORX
M3X12 (2x)
TAPTITE TORX
M3X6 (2x)
TAPTITE M3X6
(7X)

FIG 1

3 Remove volume knob as shown in fig 2 arrow 1

4 Remove volume Led as shown in fig 2 arrow 2

5 Remove nut M7X0.8 as shown in fig 2 arrow 3

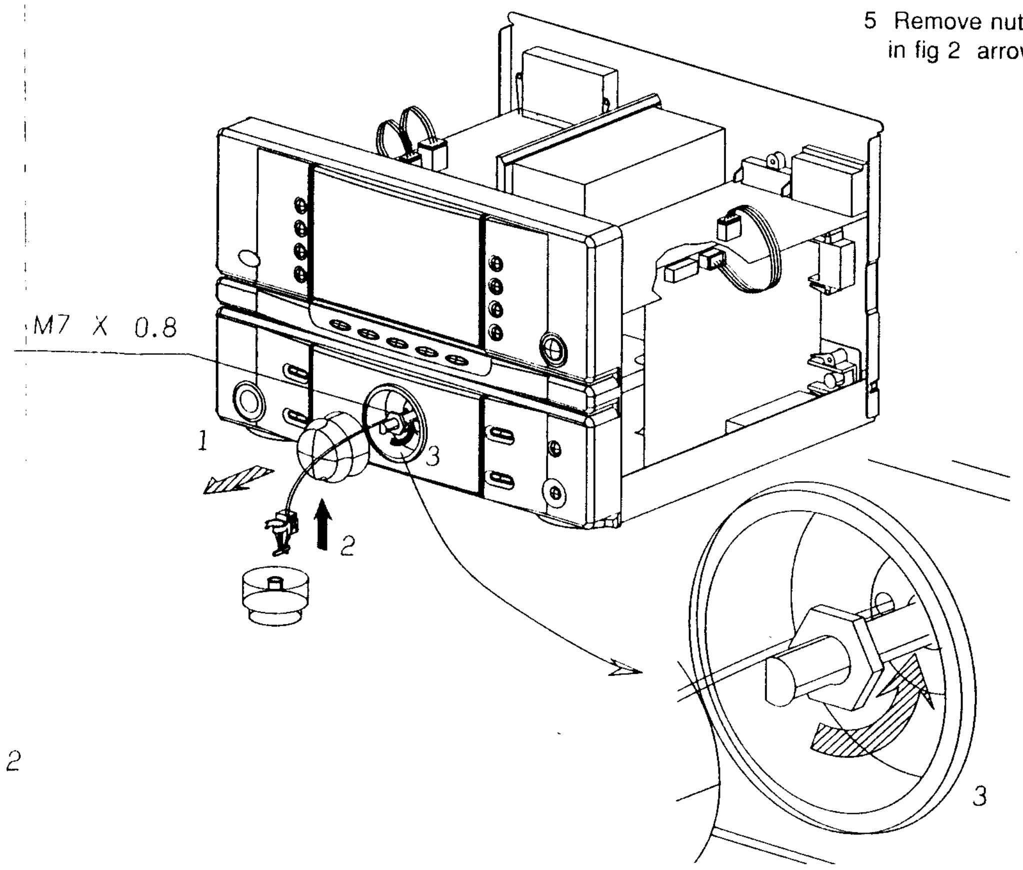


FIG 2

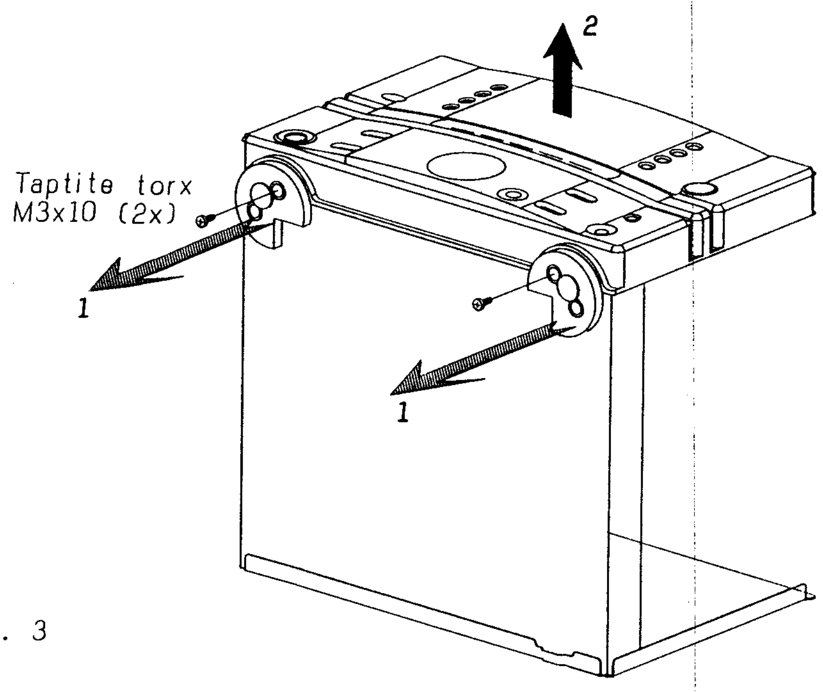

2
Taptite torx
M3x10 (2x)
1
1

fig. 3

6 Remove
2x M3X10 Taptite torx screw
see fig 3

7 Remove 2x foot as shown in fig 3 arrows 1

8 Remove front as shown in fig 3 arrow 2

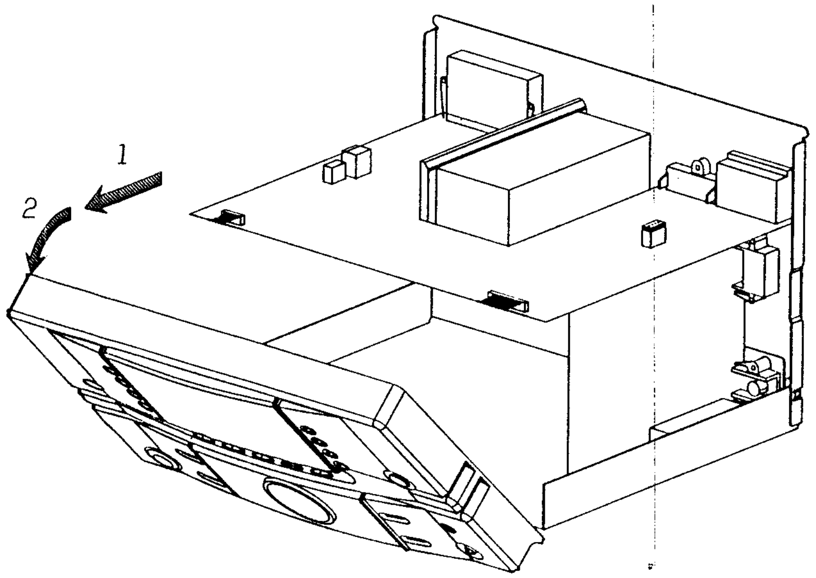


fig. 4

9 Pull and Tipp down front as shown in fig 4 arrows 1 - 2

10 Remove
10x M3X12 platite Torx scew
as shown in fig 5

11 Pull front Board out of the front as shown in fig 5 arrow 1

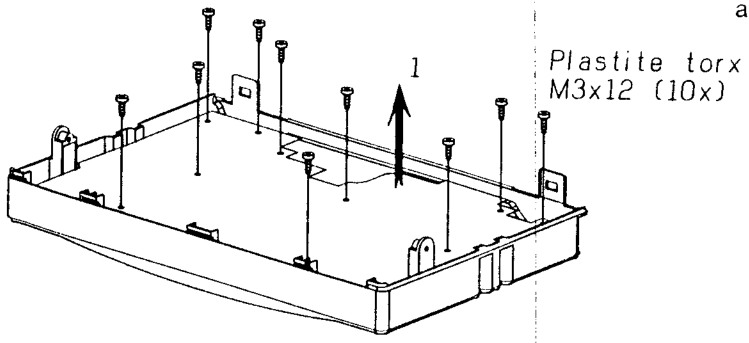

1
Plastite torx
M3x12 (10x)

fig. 5

DISMANTLING POWER - & TUNER BOARD and TRAFO

1 Remove cover as shown in fig 1

2 Remove
2x M3X6 Taptite Torx screw
9x M3X12 Plastite Torx screw
as shown in fig 6

3 Remove backcover as shown in fig 6
arrows 1 -> 2 -> 3

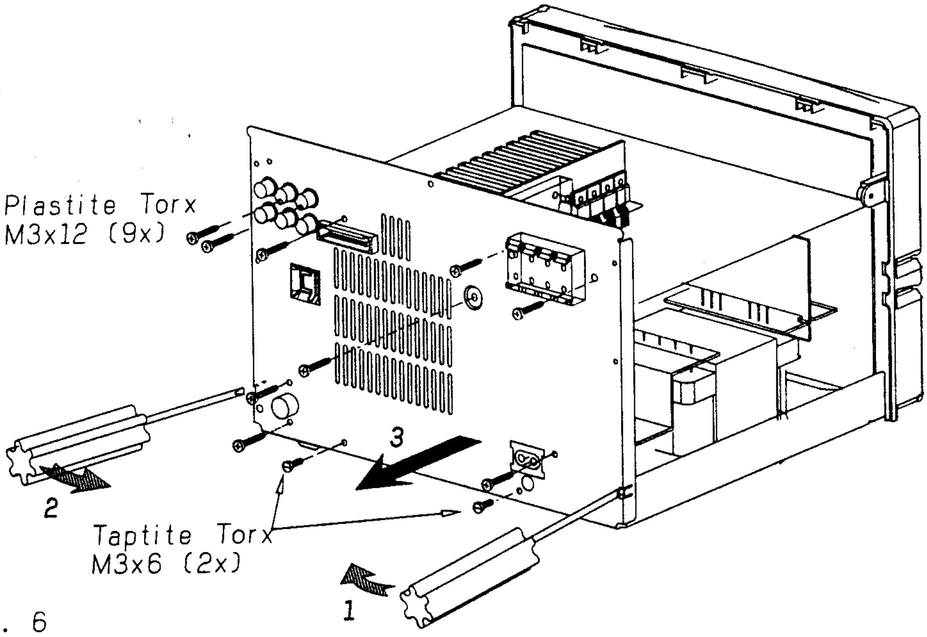

Plastite Torx
M3x12 (9x)
3
2
Taptite Torx
M3x6 (2x)
1

fig. 6

4 The Tuner can be removed as shown in fig 7 arrow 3

5 Remove
2x M3X12 Plastite Torx screw
2x M3X16 Pan Tap Torx screw
on STK IC
4x 2,9X9,5 Pan Tap Torx screw
on the TR's as shown in fig 7

6 Remove Board as shown in fig 7
arrow 1 -> 2

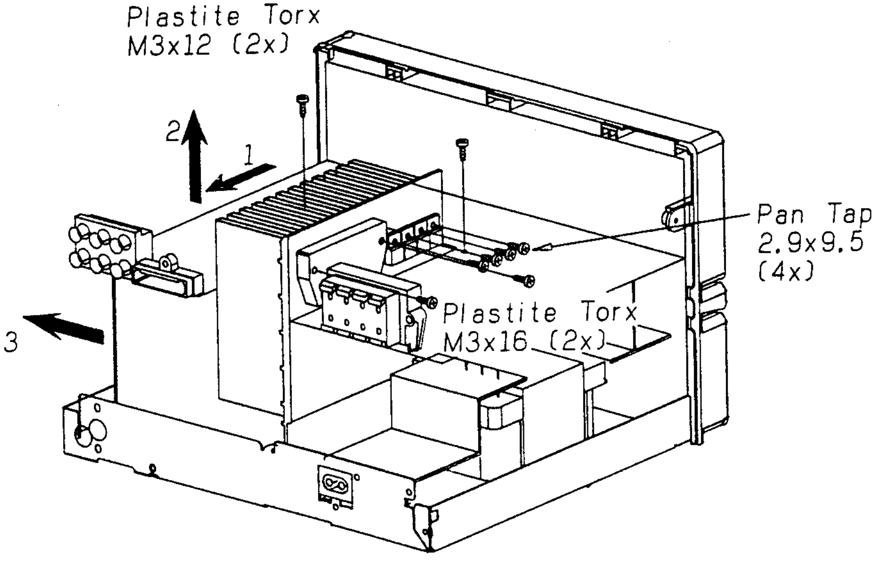

Plastite Torx
M3x12 (2x)
2
1
Pan Tap
2.9x9.5
(4x)
Plastite Torx
M3x16 (2x)
3

fig. 7

SERVICING HINT

It is possible to test the Front-display panel when it has been removed. This can be done by using the band cable going from the tuner to the selector panel and to connect this between selector panel (connector 1506) and front panel. See figure 1. The removing of the band cable A, see fig 1 arrow 2, and the connecting of the band cable A, see arrow 3, must be done when the set is disconnected from the mains. When the band cable is connected, the set can be switched on. Now the panel can be tested, for example, voltages, key test, display test (see service mode) etc.
Warning: please connect the band cable correctly as shown in fig 2. If connected wrongly, different parts will go defect.

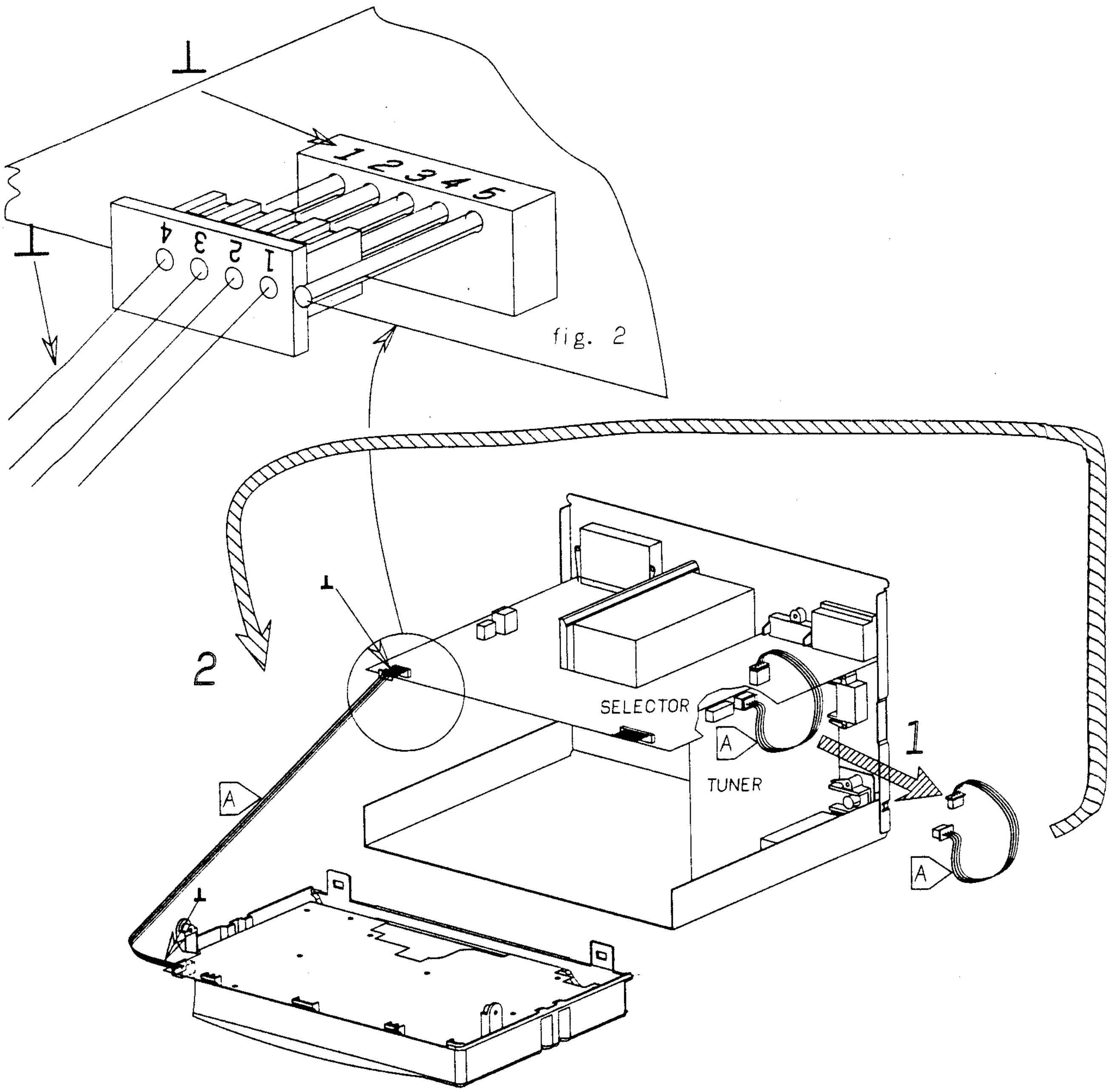


fig. 2

fig. 1

WARNINGS

GB WARNING

All IC_s and many other semi conductors are susceptible to electrostatic discharges (ESD).
Careless handling during repair can reduce life drastically.When reparing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools also at this potential.

NL WAARSCHUWING

Alle ICs en vele andere halfgeleiders zijn gevoelig voor electrostatische ontladingen (ESD).
Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.

D WARNUNG

Alle IC_s und viele andere Halbleiter sind empfindlich gegenüber electrostatischen Entladungen (ESD).
Unsorgfältige Behandlung im Reparaturfall kan die Lebensdauer drastisch reduzieren. Veranlassen Sie, dass Sie im Reparaturfall über ein Pulsarmband mit Widerstand verbunden sind mit dem gleichen Potential wie die Masse des Gerätes.
Bauteile und Hilfsmittel auch auf dieses gleiche Potential halten.

F ATTENTION

Tous les IC et beaucoup d autre semi-conducteurs sont sensibles aux décharges statiques (ESD).
Leur longévité pourrair etre considérablement écourtée par le fait qu aucune precaution n est prise à leur manipulation. Lors de réparations, s assurer de bien etre relié au meme potentiel que la masse de l appareil et enfiler le bracelet serti d une résistance de sécurité.
Veiller á ce que les composants ainsi que les outils que l on utilise soient également á ce potentiel.

I AVERTIMENTO

Tutti IC e parecchi semiconduttori sono sensibili alle scariche statiche. (ESD)
La loro longevità potrebbe essere fortemente ridatta in caso di non osservazione della più grande cauzione alla loro manipolazione. Durante le riparazioni occorre quindi essere collegato allo stesso potenziale che quello della massa dell apparecchio tramite un braccialetto a resistenza.
Assicurarsi che i componenti e anche gli utensili con quali si lavora siano anche a questo potenziale.

SAFETY

GB

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

NL

Veiligheidsbepalingen vereisen dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, identiek aan de gespecificeerde worden toegepast.

D

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Geräts darf nicht verändert werden für Reparaturen sind Original-Ersatzteile zu verwenden.

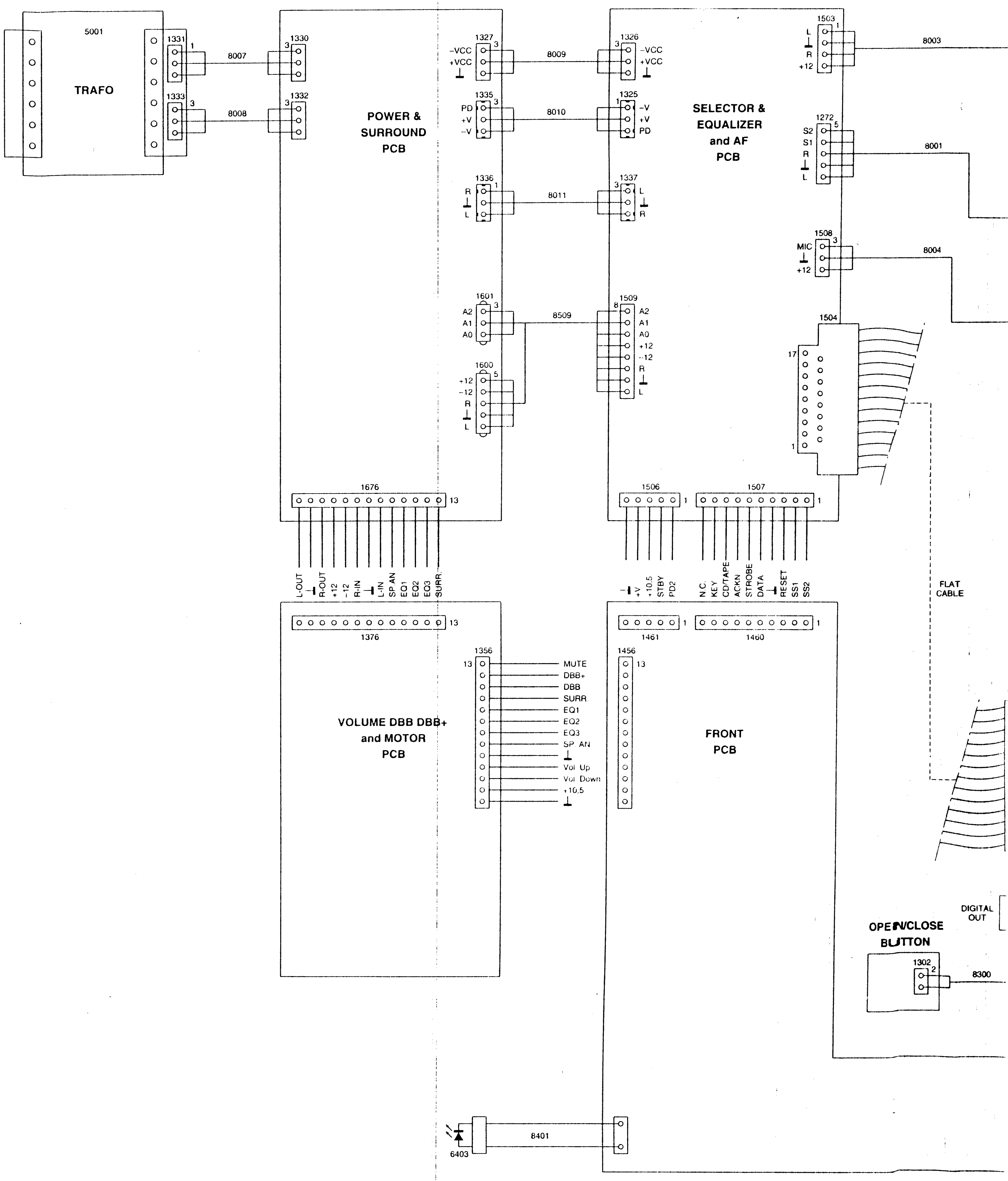
I

Le norme di sicurezza esigono che l apparecchio venga rimesso nelle condizione originali e che iano utilizzati pezzi di ricambiago identici a quelli specificati.

F

Les normes de sécurité exigent que lappareil soit remis à létat d origine et que soient utilisées les pieces de rechange identiques à celles spécifiées.

Pour votre sécurité, ces documents doivent etre utilisés par des specialistes agrées, seuls habilités à réparer votre appareil en panne.


5001
TRAFO
1331
1333
8007
8008
1330
1332
POWER &
SURROUND
PCB
1327
-VCC
+VCC
1335
PD
+V
-V
1336
R
L
1601
A2
A1
A0
1600
+12
-12
R
L
8009
8010
8011
8509
1326
-VCC
+VCC
1325
-V
+V
PD
1337
L
R
1509
A2
A1
A0
+12
-12
R
L
SELECTOR &
EQUALIZER
and AF
PCB
1503
L
R
+12
8003
1272
S2
S1
R
L
8001
1508
MIC
+12
8004
1504
17
1
1676
13
1506
1507
L-OUT
R-OUT
+12
-12
R-IN
L-IN
SP AN
EQ1
EQ2
EQ3
SURR
+V
+10,5
STBY
PD2
N.C.
KEY
CD/TAPE
ACKN
STROBE
DATA
RESET
SS1
SS2
FLAT
CABLE
1376
VOLUME DBB DBB+
and MOTOR
PCB
1356
MUTE
DBB+
DBB
SURR
EQ1
EQ2
EQ3
SP AN
Vol Up
Vol Down
+10,5
1461
1460
1456
FRONT
PCB
DIGITAL
OUT
OPEN/CLOSE
BUTTON
1302
8300
8401
6403

onducteurs sont
)).
ement écourtée par
à leur manipulation.
ıtre relié au meme
ınfiler le bracelet

ue les outils que
iel.

sensibili alle scari-

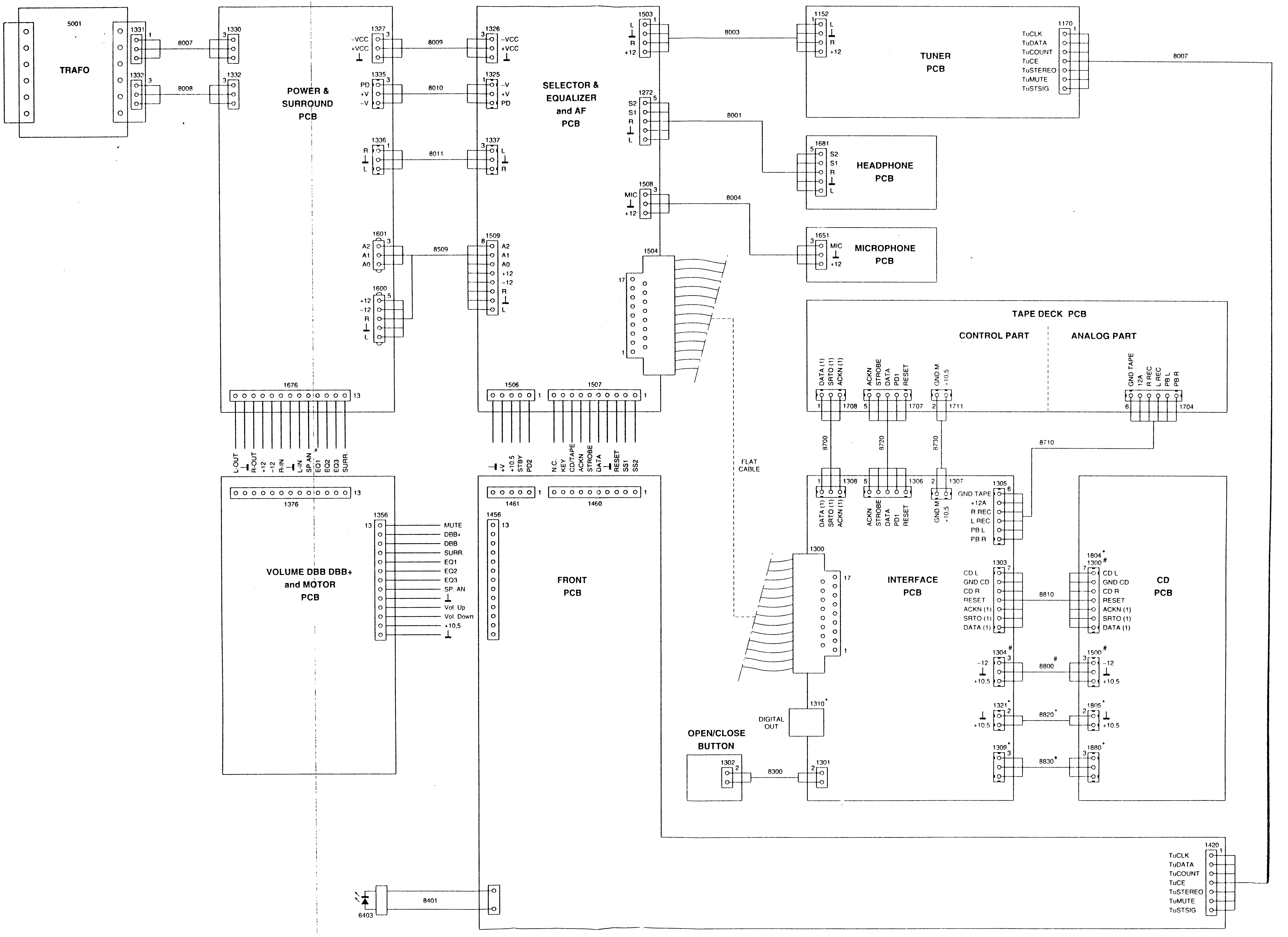
nente ridatta in
ıde cauzione alla
ıni occorre quindi
che quello della
cialetto a resisten-

li utensili con quali
ıle.

ıarecchio venga
iano utilizzati pezzi
.

pareil soit remis à
pieces de rechange

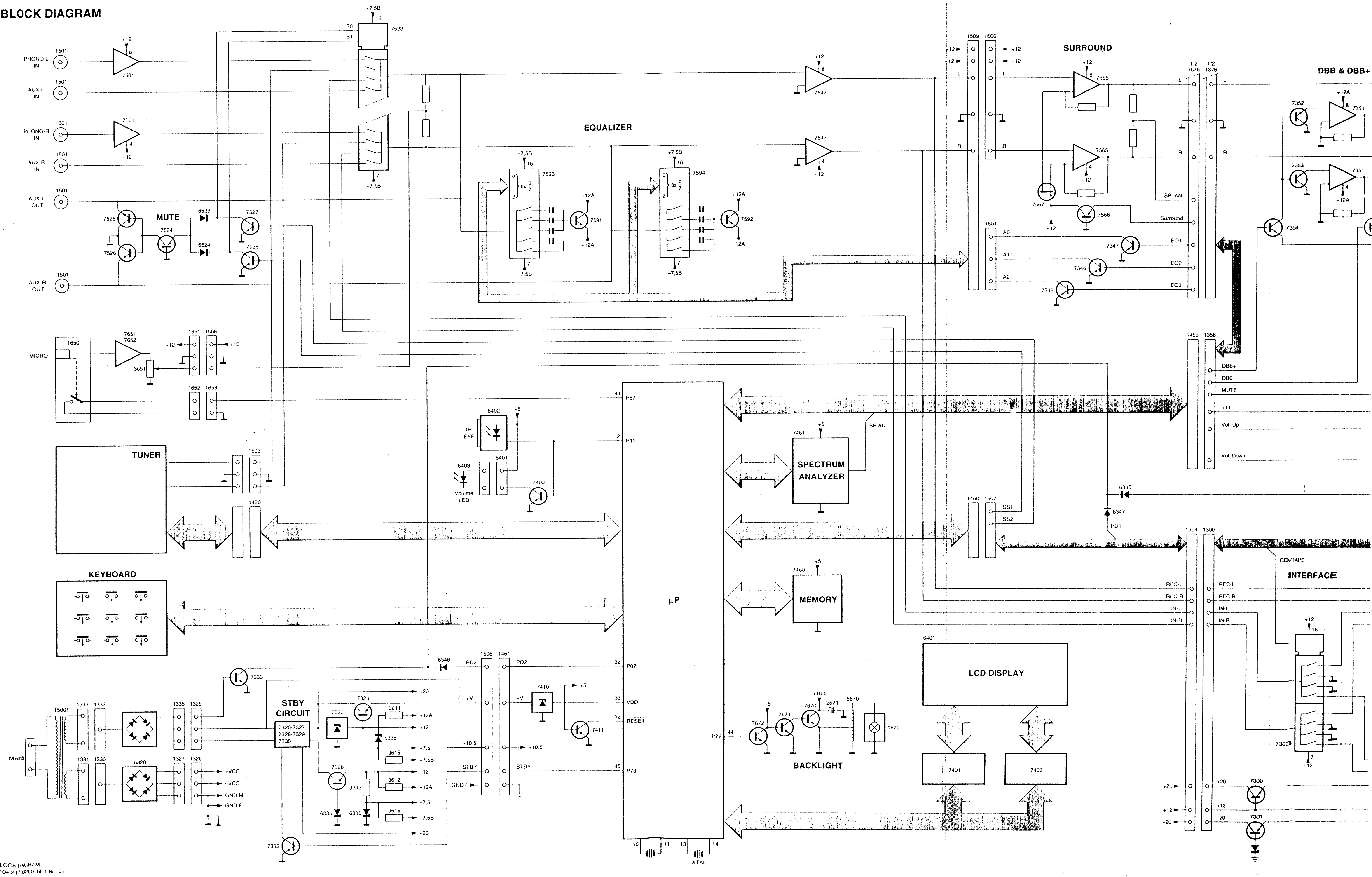
ıent etre utilisés par
à réparer votre


TRAFO
5001
1331
1332
8007
8008
1330
POWER & SURROUND PCB
1327
-VCC
+VCC
1335
PD
+V
-V
1336
R
L
1601
A2
A1
A0
1600
+12
-12
1676
8009
8010
8011
8509
1326
1325
1337
1509
SELECTOR & EQUALIZER and AF PCB
1503
+12
1272
S2
S1
1508
MIC
1504
1506
1507
8003
8001
8004
1152
TUNER PCB
1170
TuCLK
TuDATA
TuCOUNT
TuCE
TuSTEREO
TuMUTE
TuSTSIG
1681
HEADPHONE PCB
1651
MICROPHONE PCB
TAPE DECK PCB
CONTROL PART
ANALOG PART
DATA (1)
SRTO (1)
ACKN (1)
ACKN
STROBE
DATA
PD1
RESET
GND M
+10.5
GND TAPE
12A
R REC
L REC
PB L
PB R
1708
1707
1711
1704
8700
8720
8730
8710
FLAT CABLE
L-OUT
R-OUT
R-IN
L-IN
SP. AN
EQ1
EQ2
EQ3
SURR.
+10.5
STBY
PD2
N.C.
KEY
CD/TAPE
SS1
SS2
1376
VOLUME DBB DBB+ and MOTOR PCB
1356
MUTE
DBB+
DBB
Vol. Up
Vol. Down
1461
1460
1456
FRONT PCB
1308
1306
1307
1305
+12A
1300
INTERFACE PCB
1303
CD L
GND CD
CD R
8810
1804*
1300#
CD PCB
1304#
8800#
1500#
1321*
8820*
1805*
1309*
8830*
1880*
1310*
DIGITAL OUT
OPEN/CLOSE BUTTON
1302
8300
1301
1420
8401
6403

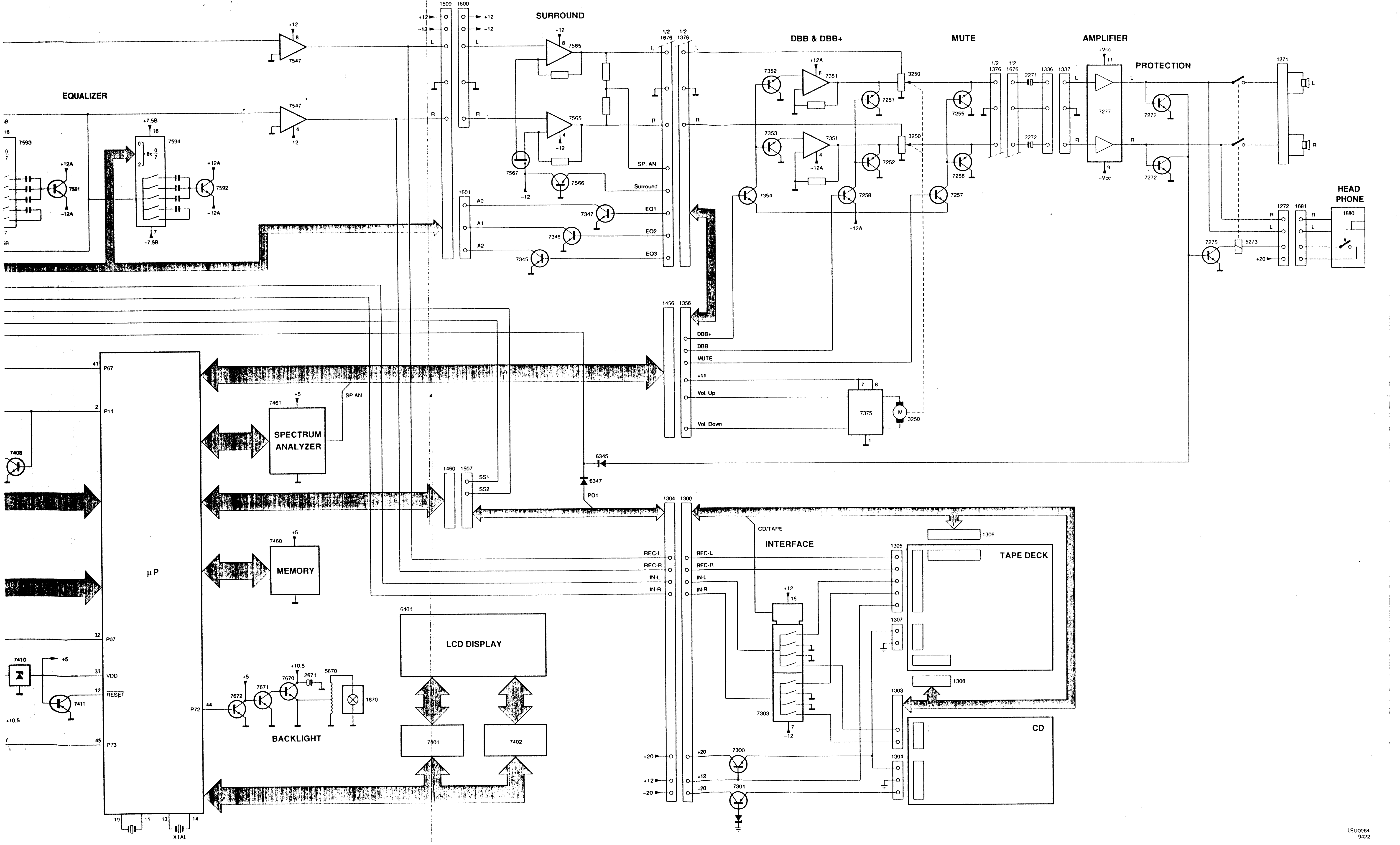
* Only with CD SHORT LOADER

# Only with CD BRICK SNG

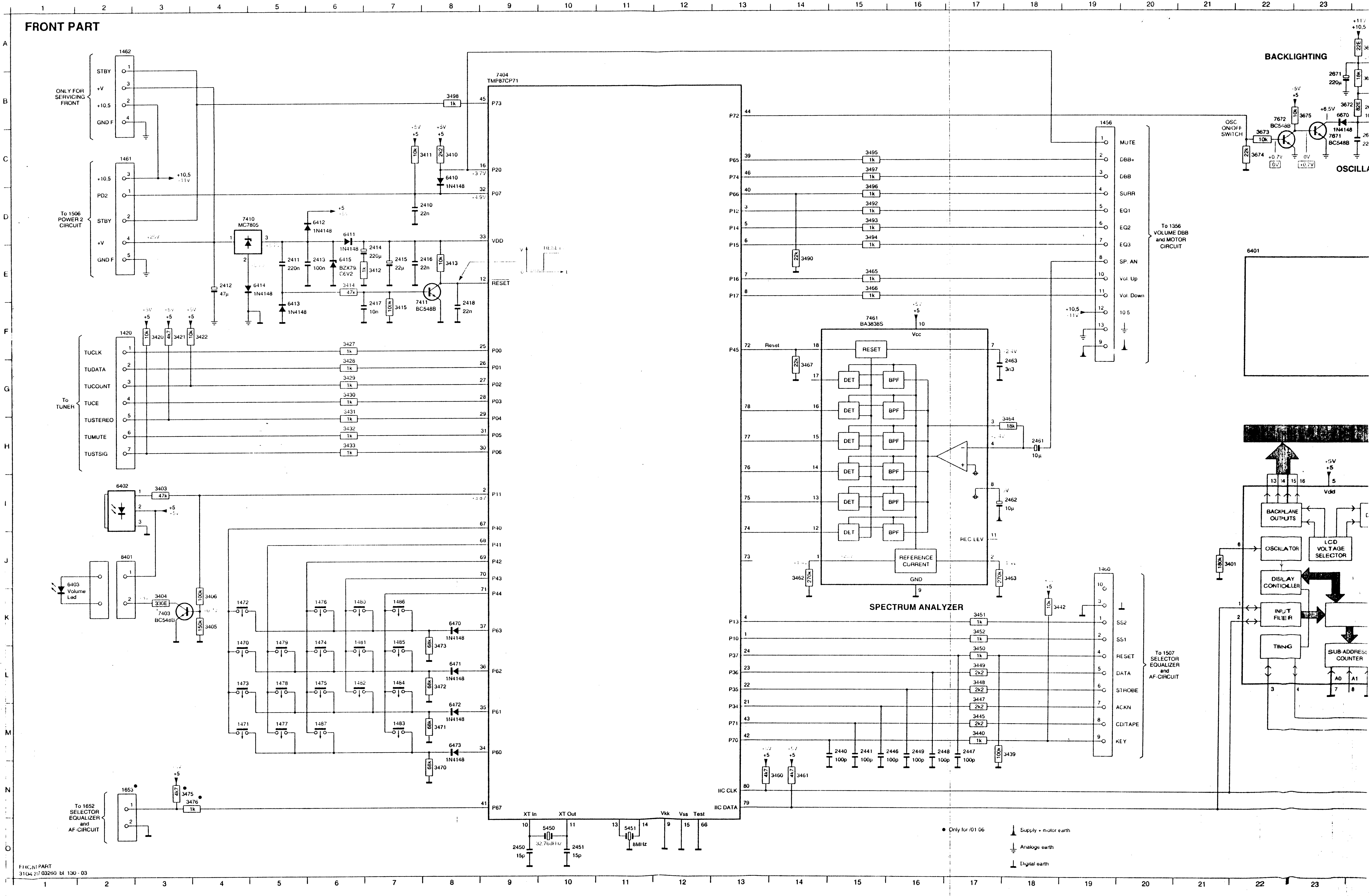
BLOCK DIAGRAM


PHONO-L IN
AUX L IN
PHONO-R IN
AUX-R IN
AUX-L OUT
AUX R OUT
1501
7501
7523
S0
S1
+7.5B
-7.5B
+12
-12
MUTE
7524
7525
7526
7527
7528
6523
6524
EQUALIZER
7593
7594
7591
7592
+12A
-12A
7547
SURROUND
7565
7566
7567
7345
7346
7347
1509
1600
1601
1676
1376
L
R
A0
A1
A2
SP. AN
Surround
EQ1
EQ2
EQ3
DBB & DBB+
7351
7352
7353
7354
MICRO
1650
7651
7652
3651
1651
1508
1652
1653
TUNER
1503
1420
KEYBOARD
1456
1356
DBB+
DBB
MUTE
+11
Vol. Up
Vol. Down
6402
IR EYE
6403
Volume LED
8401
7403
P67
P11
P07
VDD
RESET
P72
P73
μP
XTAL
7461
SPECTRUM ANALYZER
SP AN
7460
MEMORY
1460
1507
SS1
SS2
6345
6347
PD1
1304
1300
CD/TAPE
INTERFACE
REC L
REC R
IN-L
IN-R
7303
7300
7301
+20
-20
MAINS
T5001
1333
1332
1331
1330
6320
1335
1325
1327
1326
+VCC
-VCC
GND M
GND F
STBY CIRCUIT
7320-7327
7328 7329
7330
7322
7324
7326
7332
7333
3611
3612
3615
3616
3343
6333
6335
6336
+7.5
-7.5
-12A
1506
1461
6346
PD2
+V
+10.5
STBY
7410
7411
+5
BACKLIGHT
7670
7671
7672
2671
5670
1670
6401
LCD DISPLAY
7401
7402

BLOCK DIAGRAM
3104 217 8260 bl 136 01


EQUALIZER
SURROUND
DBB & DBB+
MUTE
AMPLIFIER
PROTECTION
HEAD PHONE
SPECTRUM ANALYZER
MEMORY
µP
LCD DISPLAY
BACKLIGHT
INTERFACE
TAPE DECK
CD
7547
7565
7567
7566
7593
7591
7594
7592
7347
7346
7345
1509
1600
1601
1676
1376
7352
7353
7351
7354
7251
7252
7258
7255
7256
7257
3250
1336
1337
2271
2272
7277
7272
1271
1272
1681
1680
5273
7275
1456
1356
DBB+
DBB
MUTE
+11
Vol. Up
Vol. Down
7375
M
6345
6347
PD1
1460
1507
SS1
SS2
SP AN
SP. AN
Surround
EQ1
EQ2
EQ3
A0
A1
A2
7461
7460
7408
7410
7411
P67
P11
P07
VDD
RESET
P72
P73
XTAL
6401
7401
7402
7672
7671
7670
2671
5670
1670
1304
1300
CD/TAPE
1306
1305
1307
1308
1303
REC-L
REC-R
IN-L
IN-R
7303
7300
7301
+20
+12
-20
+12A
-12A
+7,5B
-7,5B
+Vcc
-Vcc
+5
+10,5
LEU0064
9422

FRONT PART

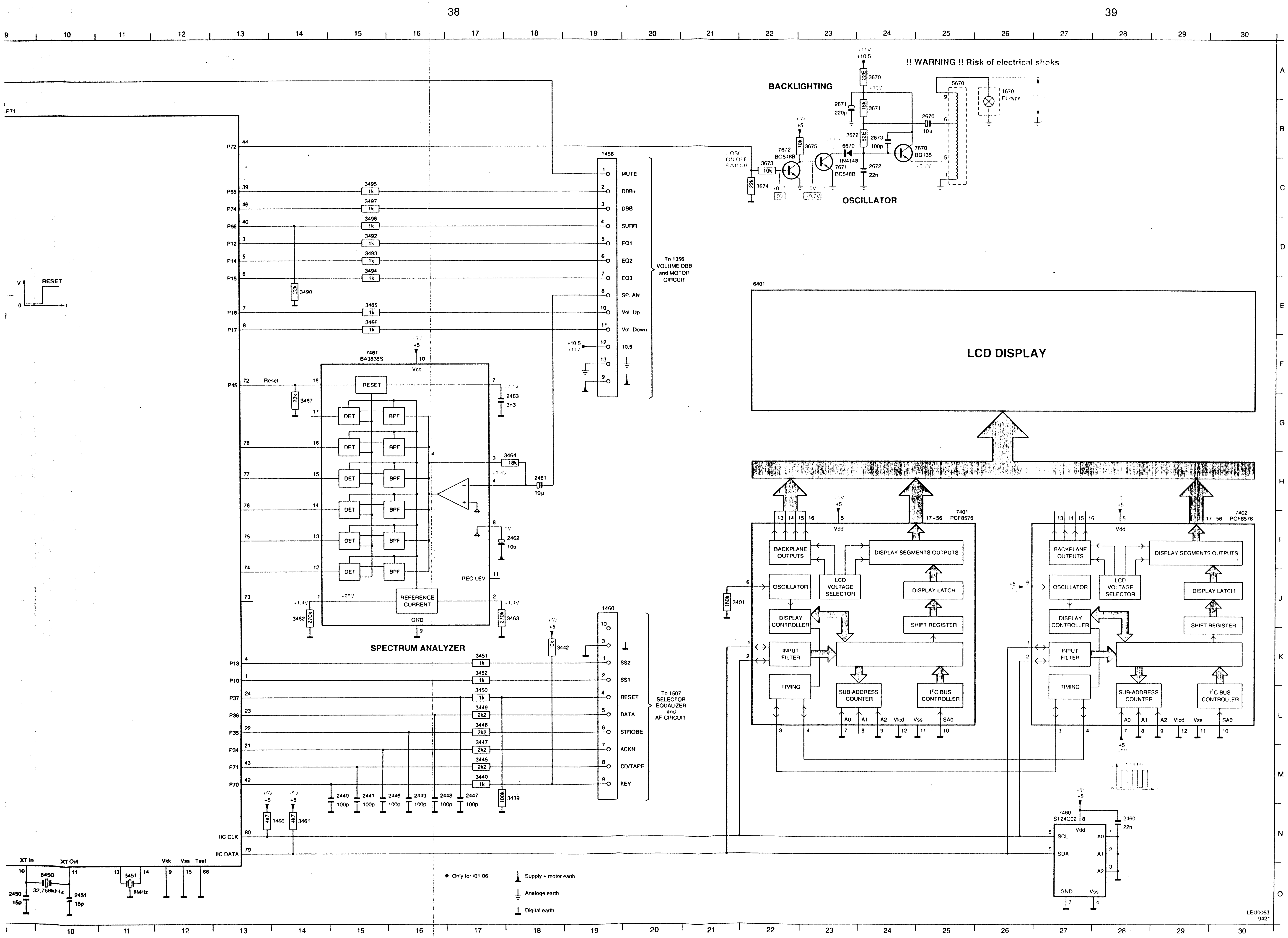

1462
STBY
+V
+10,5
GND F
ONLY FOR SERVICING FRONT
1461
+10,5
PD2
STBY
+V
GND F
To 1506 POWER 2 CIRCUIT
7410 MC7805
6412 1N4148
6411 1N4148
6414 1N4148
6413 1N4148
6415 BZX79 C6V2
2411 220n
2413 100n
2414 220µ
2415 22µ
2416 22n
2412 47µ
2417 10n
2418 22n
3412 1k
3413 10k
3414 47k
3415 100k
7411 BC548B
3410 2k2
3411 10k
6410 1N4148
2410 22n
3498 1k
7404 TMP87CP71
P73
P20
P07
VDD
RESET
P00
P01
P02
P03
P04
P05
P06
P11
P40
P41
P42
P43
P44
P63
P62
P61
P60
P67
XT In
XT Out
Vkk
Vss
Test
5450 32.768kHz
5451 8MHz
2450 15p
2451 15p
1420
TUCLK
TUDATA
TUCOUNT
TUCE
TUSTEREO
TUMUTE
TUSTSIG
To TUNER
3420 10k
3421 4k7
3422 10k
3427 1k
3428 1k
3429 1k
3430 1k
3431 1k
3432 1k
3433 1k
6402
3403 47k
8401
6403 Volume Led
3404 330E
7403 BC548B
3406 100k
3405 150k
1472
1476
1480
1486
1470
1479
1474
1481
1485
1473
1478
1475
1482
1484
1471
1477
1487
1483
6470 1N4148
6471 1N4148
6472 1N4148
6473 1N4148
3473 68k
3472 68k
3471 68k
3470 68k
1653
To 1652 SELECTOR EQUALIZER and AF-CIRCUIT
3475 4k7
3476 1k
P72
P65
P74
P66
P12
P14
P15
P16
P17
P45
P13
P10
P37
P36
P35
P34
P71
P70
IIC CLK
IIC DATA
3495 1k
3497 1k
3496 1k
3492 1k
3493 1k
3494 1k
3465 1k
3466 1k
3490 22k
1456
MUTE
DBB+
DBB
SURR
EQ1
EQ2
EQ3
SP. AN
Vol. Up
Vol. Down
10.5
To 1356 VOLUME DBB and MOTOR CIRCUIT
7461 BA3838S
Vcc
RESET
DET
BPF
REFERENCE CURRENT
GND
REC LEV
Reset
3467 22k
3462 270k
3463 270k
3464 18k
2463 3n3
2461 10µ
2462 10µ
SPECTRUM ANALYZER
1460
SS2
SS1
RESET
DATA
STROBE
ACKN
CD/TAPE
KEY
To 1507 SELECTOR EQUALIZER and AF-CIRCUIT
3451 1k
3452 1k
3450 1k
3449 2k2
3448 2k2
3447 2k2
3445 2k2
3440 1k
3442 10k
3439 100k
2440 100p
2441 100p
2446 100p
2449 100p
2448 100p
2447 100p
3460 4k7
3461 4k7
BACKLIGHTING
2671 220µ
7672 BC548B
7671 BC548B
6670 1N4148
3673 10k
3674 22k
3675 10k
3672 82E
OSC ON/OFF SWITCH
OSCILLA
6401
BACKPLANE OUTPUTS
LCD VOLTAGE SELECTOR
OSCILLATOR
DISPLAY CONTROLLER
INPUT FILTER
TIMING
SUB-ADDRESS COUNTER
Vdd
3401 180k

● Only for /01 06

Supply + motor earth

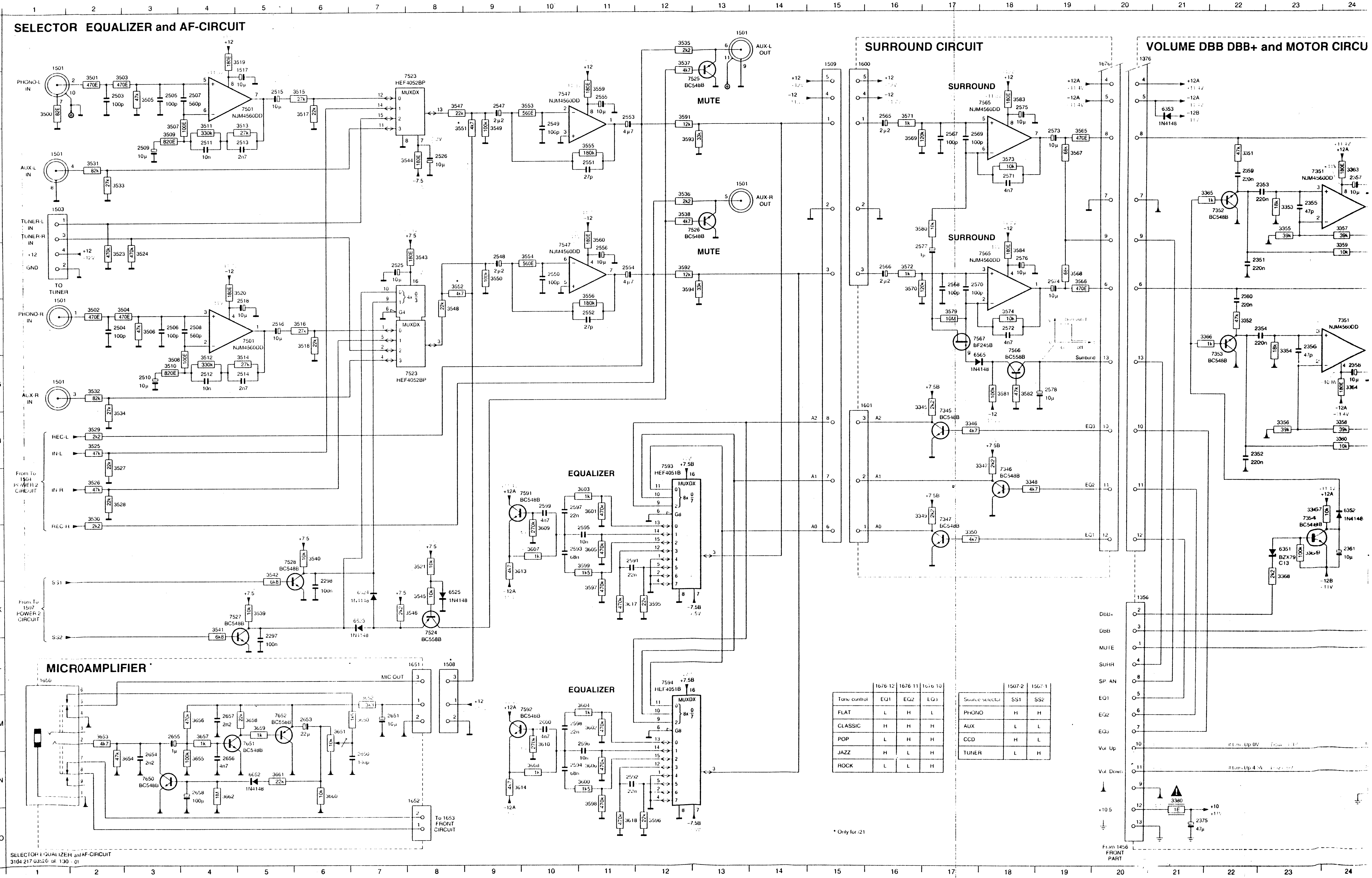
Analoge earth

Digital earth


38
39
!! WARNING !! Risk of electrical shoks
BACKLIGHTING
OSCILLATOR
OSC ON/OFF SWITCH
7672 BC548B
7671 BC548B
7670 BD135
1N4148
5670
1670 EL-type
LCD DISPLAY
6401
7401 PCF8576
7402 PCF8576
BACKPLANE OUTPUTS
DISPLAY SEGMENTS OUTPUTS
OSCILLATOR
LCD VOLTAGE SELECTOR
DISPLAY LATCH
DISPLAY CONTROLLER
SHIFT REGISTER
INPUT FILTER
TIMING
SUB-ADDRESS COUNTER
I²C BUS CONTROLLER
7460 ST24C02
SCL
SDA
GND
Vdd
Vss
1456
MUTE
DBB+
DBB
SURR
EQ1
EQ2
EQ3
SP. AN
Vol. Up
Vol. Down
To 1356 VOLUME DBB and MOTOR CIRCUIT
7461 BA3838S
RESET
DET
BPF
REFERENCE CURRENT
REC-LEV
SPECTRUM ANALYZER
1460
SS2
SS1
RESET
DATA
STROBE
ACKN
CD/TAPE
KEY
To 1507 SELECTOR EQUALIZER and AF-CIRCUIT
IIC CLK
IIC DATA
XT In
XT Out
5450 32.768kHz
5451 8MHz
Vkk
Vss
Test
● Only for /01 06
Supply + motor earth
Analoge earth
Digital earth
LEU0063 9421

1420	F2
1456	B19
1460	J19
1461	C2
1462	A2
1470	K4
1471	M4
1472	K4
1473	L4
1474	K6
1475	L6
1476	K6
1477	M5
1478	L5
1479	K5
1480	K6
1481	K6
1482	L6
1483	M7
1484	L7
1485	K7
1486	K7
1487	M6
1653	N2
1670	A26
2410	D7
2411	E5
2412	E4
2413	E6
2414	E7
2415	E7
2416	E7
2417	F7
2418	F8
2440	M15
2441	M15
2446	M16
2447	M17
2448	M16
2449	M16
2450	O9
2451	O10
2460	N28
2461	H18
2462	I18
2463	G18
2670	B25
2671	B23
2672	C24
2673	B24
3401	J21
3403	I3
3404	K3
3405	K4
3406	K4
3410	C8
3411	C7
3412	E7
3413	E8
3414	E6
3415	F7
3420	F3
3421	F3
3422	F4
3427	F6
3428	G6
3429	G6
3430	G6
3431	G6
3432	H6
3433	H6
3439	M18
3440	M17
3442	K18
3445	M17
3447	L17
3448	L17
3449	L17
3450	L17
3451	K17
3452	K17
3460	N14
3461	N14
3462	J14
3463	J18
3464	H17
3465	E15
3466	E15
3467	G14
3470	N8
3471	M8
3472	L8
3473	L8
3475	N3
3476	N3
3490	E14
3492	D15
3493	D15
3494	D15
3495	C15
3496	D15
3497	C15
3498	B8
3670	A24
3671	B24
3672	B23
3673	C22
3674	C22
3675	B23
5450	O10
5451	O11
5670	A25
6401	E22
6402	I2
6403	J1
6410	C8
6411	D6
6412	D6
6413	F5
6414	E5
6415	E6
6470	K8
6471	L8
6472	M8
6473	M8
6670	B23
7401	I25
7402	I30
7403	K3
7404	B9
7410	D4
7411	F7
7460	N27
7461	F15
7670	B24
7671	C23
7672	B22
8401	J2

SELECTOR EQUALIZER and AF-CIRCUIT

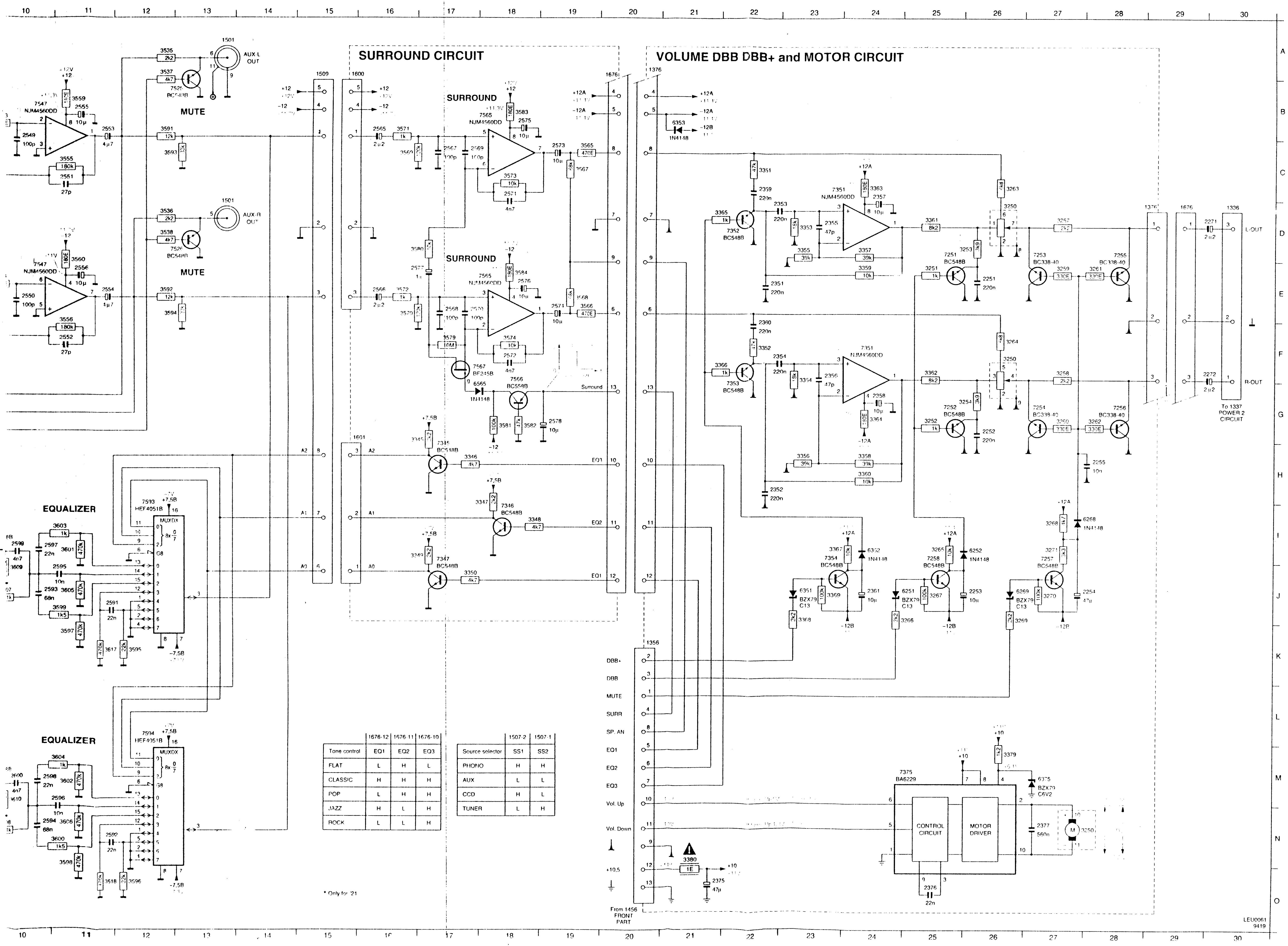

SURROUND CIRCUIT
VOLUME DBB DBB+ and MOTOR CIRCU
MICR0AMPLIFIER
EQUALIZER
EQUALIZER
MUTE
MUTE
SURROUND
SURROUND
PHONO-L IN
AUX-L IN
TUNER-L IN
TUNER-R IN
+12
GND
TO TUNER
PHONO-R IN
AUX-R IN
REC-L
IN-L
IN-R
REC-R
From To 1504 POWER 2 CIRCUIT
SS1
SS2
From To 1507 POWER 2 CIRCUIT
AUX-L OUT
AUX-R OUT
HEF4052BP
NJM4560DD
HEF4051B
MUXDX
BC548B
BC558B
BF245B
1N4148
BZX79 C13
MIC OUT
To 1653 FRONT CIRCUIT
DBB+
DBB
MUTE
SURR
SP AN
EQ1
EQ2
EQ3
Vol Up
Vol Down
+10.5
From 1456 FRONT PART
Surround
* Only for /21

	1676-12	1676-11	1676-10
Tone control	EQ1	EQ2	EQ3
FLAT	L	H	L
CLASSIC	H	H	H
POP	L	H	H
JAZZ	H	L	H
ROCK	L	L	H

	1507-2	1507-1
Source selector	SS1	SS2
PHONO	H	H
AUX	L	L
CCD	H	L
TUNER	L	H

SELECTOR EQUALIZER and AF-CIRCUIT
3104 217 03520 bl 130 - 01

PCS 69 356

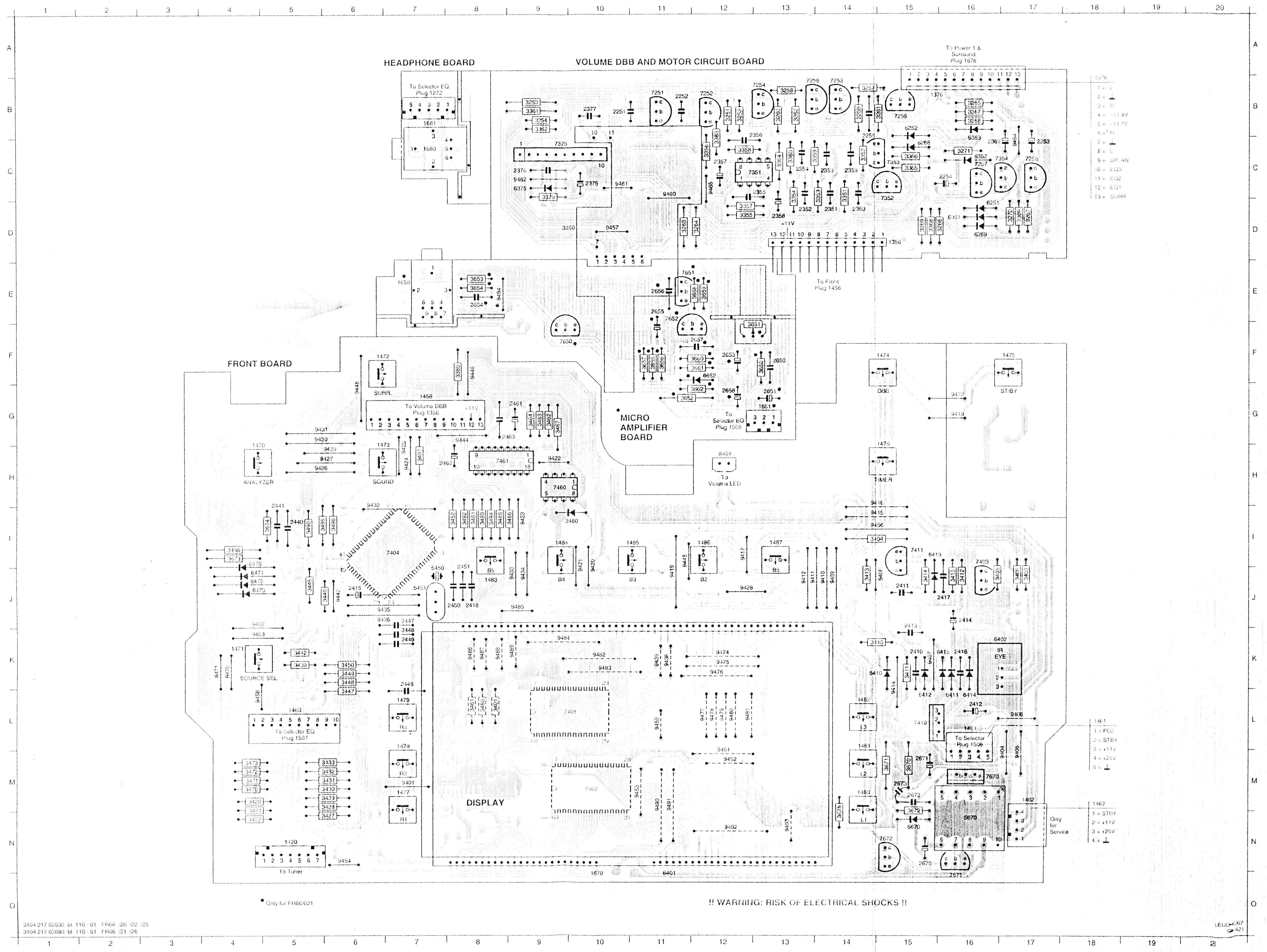

SURROUND CIRCUIT
VOLUME DBB DBB+ and MOTOR CIRCUIT
SURROUND
SURROUND
MUTE
MUTE
EQUALIZER
EQUALIZER
AUX-L OUT
AUX-R OUT
1501
7547 NJM4560DD
7565 NJM4560DD
7351 NJM4560DD
7525 BC548B
7526 BC548B
7567 BF245B
7566 BC558B
6565 1N4148
7345 BC548B
7346 BC548B
7347 BC548B
7593 HEF4051B
7594 HEF4051B
MUXDX
7352 BC548B
7353 BC548B
7251 BC548B
7252 BC548B
7253 BC338-40
7254 BC338-40
7255 BC338-40
7256 BC338-40
7354 BC548B
7258 BC548B
7257 BC548B
6351 BZX79 C13
6251 BZX79 C13
6269 BZX79 C13
6352 1N4148
6252 1N4148
6268 1N4148
6353 1N4148
7375 BA6229
CONTROL CIRCUIT
MOTOR DRIVER
6375 BZX79 C6V2
3250
M
1509
1600
1601
1676
1376
1356
1336
Surround
A2
A1
A0
EQ3
EQ2
EQ1
L-OUT
R-OUT
To 1337 POWER 2 CIRCUIT
DBB+
DBB
MUTE
SURR
SP. AN
EQ1
EQ2
EQ3
Vol. Up
Vol. Down
+10,5
3380 1E
From 1456 FRONT PART
* Only for /21
+12
-12
+12A
-12A
-12B
+7,5B
-7,5B
+10
LEU0061 9419

	1676-12	1676-11	1676-10
Tone control	EQ1	EQ2	EQ3
FLAT	L	H	L
CLASSIC	H	H	H
POP	L	H	H
JAZZ	H	L	H
ROCK	L	L	H

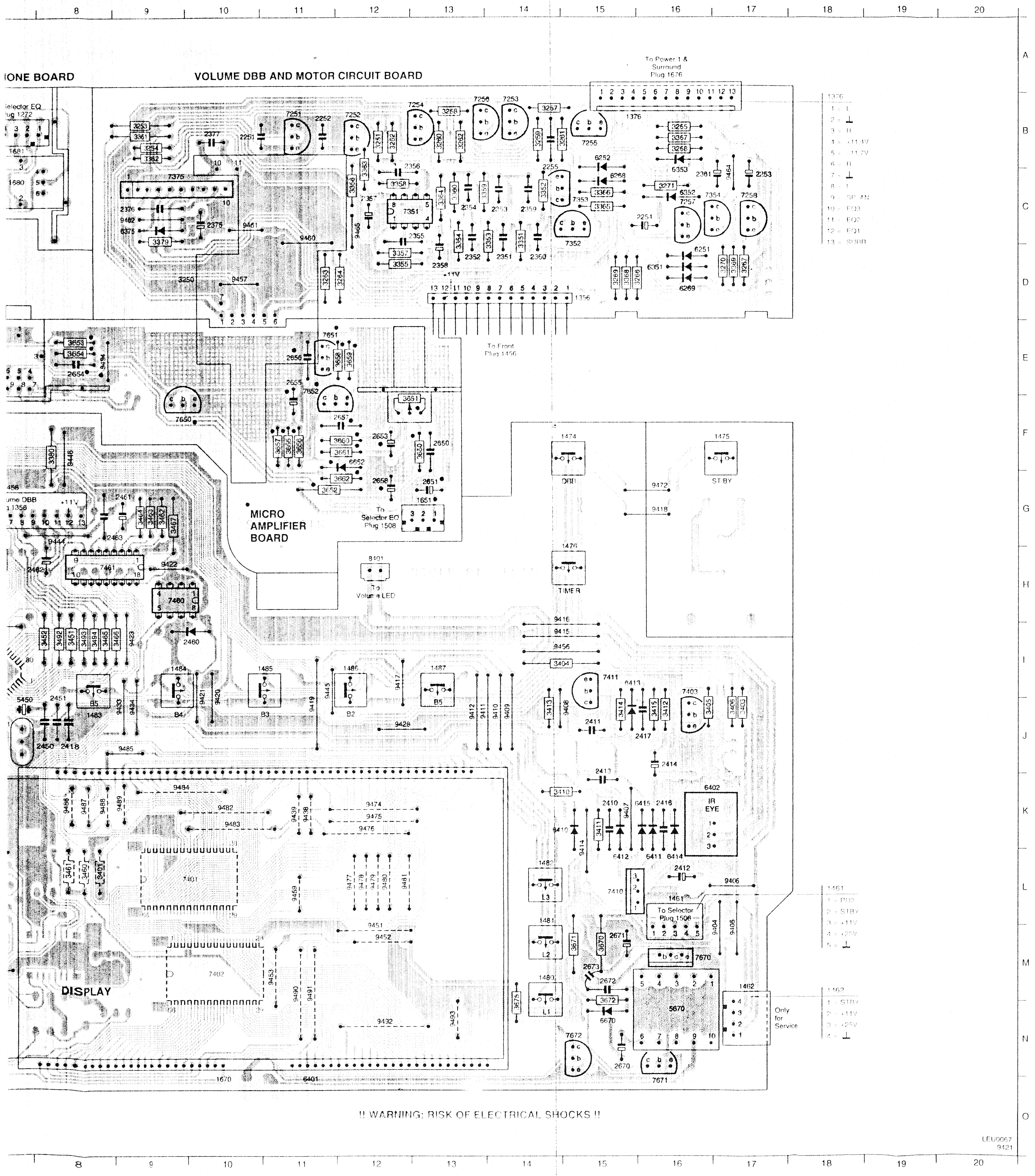
	1507-2	1507-1
Source selector	SS1	SS2
PHONO	H	H
AUX	L	L
CCD	H	L
TUNER	L	H

1336	D30	3268	I27	3607	J10
1356	K20	3269	J26	3608	N10
1376	A20	3270	J27	3609	J10
1376	D28	3271	I27	3610	M10
1501	D13	3345	H16	3613	J9
1501	A13	3346	H17	3614	N9
1501	G1	3347	I17	3617	K11
1501	F1	3348	I18	3618	O11
1501	C1	3349	I16	3650	M7
1501	A1	3350	J17	3651	M6
1503	D1	3351	C22	3652	M7
1508	L8	3352	F22	3653	M2
1509	A15	3353	D23	3654	N2
1517	B5	3354	G23	3655	N4
1600	A15	3355	D23	3656	M4
1601	G15	3356	H23	3657	M4
1650	L1	3357	D24	3658	M5
1651	L8	3358	H24	3659	M5
1652	N8	3359	E24	3660	N6
1676	A20	3360	H24	3661	N5
1676	D29	3361	D25	3662	N4
2251	E26	3362	F25	6251	J24
2252	G26	3363	C24	6252	I26
2253	J26	3364	G24	6268	I27
2254	J27	3365	D21	6269	J26
2255	H28	3366	F21	6351	J23
2271	D29	3367	I23	6352	I24
2272	F29	3368	J23	6353	B21
2297	L5	3369	J23	6375	M27
2298	K6	3379	M26	6523	K7
2351	E22	3380	N21	6524	K7
2352	H22	3500	B1	6525	K8
2353	D22	3501	B2	6565	G17
2354	F22	3502	F2	6652	N5
2355	D23	3503	B2	7251	D25
2356	F23	3504	F2	7252	G25
2357	C24	3505	B3	7253	D27
2358	G24	3506	F3	7254	G27
2359	C22	3507	C3	7255	D28
2360	F22	3508	G3	7256	G28
2361	J24	3509	C3	7257	I27
2375	O21	3510	G3	7258	I25
2376	O25	3511	B4	7345	H17
2377	N27	3512	G4	7346	I18
2503	B2	3513	B5	7347	I17
2504	F2	3514	G5	7351	C23
2505	B3	3515	B6	7351	F24
2506	F3	3516	F6	7352	D22
2507	B4	3517	B6	7353	G22
2508	F4	3518	F6	7354	I23
2509	C3	3519	A4	7375	M24
2510	G3	3520	E4	7501	F5
2511	C4	3521	J8	7501	B5
2512	G4	3523	E2	7523	G7
2513	C5	3524	E3	7523	B7
2514	G5	3525	H2	7524	K8
2515	B5	3526	I2	7525	B12
2516	F5	3527	I2	7526	D12
2518	F5	3528	I2	7527	K4
2525	E7	3529	H2	7528	J5
2526	C8	3530	I2	7547	E10
2547	B9	3531	C2	7547	B10
2548	E9	3532	G2	7565	E17
2549	B10	3533	D2	7565	B17
2550	E10	3534	H2	7566	G18
2551	C11	3535	A12	7567	F17
2552	F11	3536	D12	7591	I9
2553	B11	3537	A12	7592	M9
2554	E11	3538	D12	7593	I12
2555	B11	3539	K5	7594	L12
2556	E11	3540	J6	7650	N3
2565	B16	3541	K4	7651	M5
2566	E16	3542	J5	7652	M5
2567	C17	3543	E8		
2568	E17	3544	C7		
2569	C17	3545	K8		
2570	E17	3546	K7		
2571	C18	3547	B8		
2572	F18	3548	F8		
2573	C19	3549	C9		
2574	E19	3550	E9		
2575	B18	3551	C8		
2576	E18	3552	E8		
2577	E16	3553	B10		
2578	G19	3554	E10		
2591	J11	3555	C11		
2592	N11	3556	F11		
2593	J10	3559	B11		
2594	N10	3560	E11		
2595	J10	3565	C19		
2596	M10	3566	E19		
2597	I10	3567	C19		
2598	M10	3568	E19		
2599	I10	3569	C16		
2600	M10	3570	E16		
2650	N7	3571	B16		
2651	M7	3572	E16		
2653	M6	3573	C18		
2654	N3	3574	F18		
2655	M3	3579	F17		
2656	N4	3580	D16		
2657	M4	3581	G18		
2658	N4	3582	G18		
3250	F26	3583	B18		
3250	D26	3584	E18		
3250	N27	3591	B12		
3251	E25	3592	E12		
3252	G25	3593	C12		
3253	D25	3594	E12		
3254	G25	3595	K12		
3257	D27	3596	O12		
3258	F27	3597	K11		
3259	E27	3598	O11		
3260	G27	3599	J10		
3261	E28	3600	N10		
3262	G28	3601	I11		
3263	C26	3602	M11		
3264	F26	3603	I10		
3265	I25	3604	M10		
3266	J24	3605	J11		
3267	J25	3606	N11		

Front PCB
Headphone PCB
Volume DBB
&
Motor circuit PCB


HEADPHONE BOARD
VOLUME DBB AND MOTOR CIRCUIT BOARD
To Selector EQ Plug 1272
To Power 1 & Surround Plug 1676
1376
1 = L
2 = ⊥
3 = R
4 = +11.4V
5 = +11.7V
6 = R
7 = ⊥
8 = L
9 = SP. AN
10 = EQ3
11 = EQ2
12 = EQ1
13 = SURR
To Front Plug 1456
MICRO AMPLIFIER BOARD
To Selector EQ Plug 1506
To Volume LED
FRONT BOARD
SURR.
To Volume DBB Plug 1356
+11V
ANALYZER
SOUND
SOURCE SEL
To Selector EQ Plug 1507
To Tuner
DBB
ST/BY
TIMER
IR EYE
To Selector Plug 1506
1461
1 = PD2
2 = STBY
3 = +11V
4 = +25V
5 = ⊥
1462
1 = STBY
2 = +11V
3 = +25V
4 = ⊥
Only for Service
DISPLAY
• Only for FR66/021
!! WARNING: RISK OF ELECTRICAL SHOCKS !!
3104 217 03530 bl. 110 - 01 FR66 /20 /22 /25
3104 217 03680 bl. 110 - 01 FR66 /21 /26
LE00-067
421

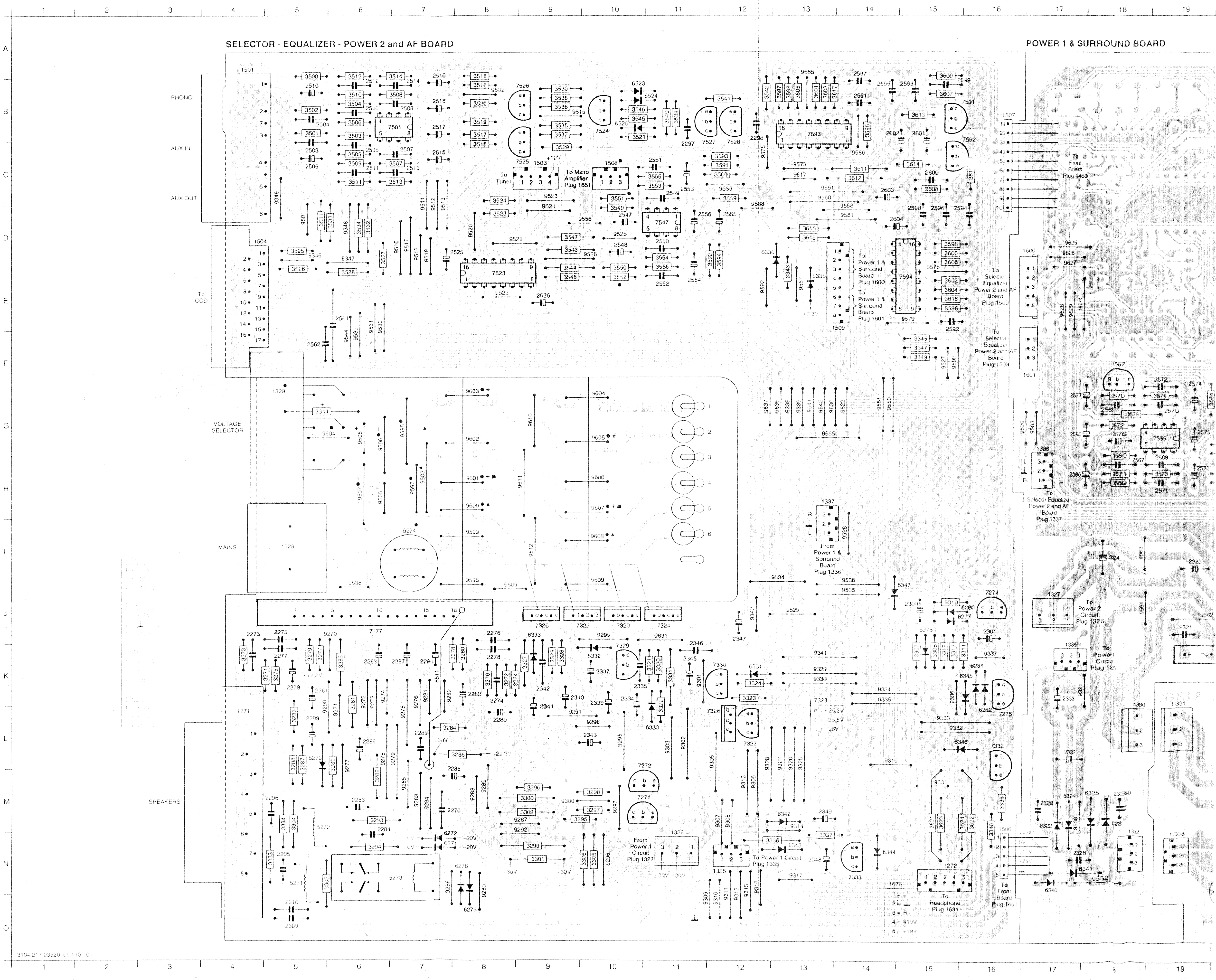
1356	D15
1376	B15
1420	N5
1456	G7
1460	L5
1461	L16
1462	M17
1470	H4
1471	K4
1472	F6
1473	H6
1474	F14
1475	F17
1476	H14
1477	M7
1478	L7
1479	L7
1480	M14
1481	L14
1482	L14
1483	J8
1484	I9
1485	I10
1486	I12
1487	I13
1650	E7
1651	G13
1670	O10
1680	C7
1681	B7
2251	B10
2252	B11
2253	C17
2254	C16
2255	C14
2351	D14
2352	D13
2353	C14
2354	C13
2355	C12
2356	C12
2357	C12
2358	D13
2359	C14
2360	D14
2361	C16
2375	C10
2376	C9
2377	B10
2410	K15
2411	J15
2412	L16
2413	K15
2414	J16
2415	J6
2416	K16
2417	J15
2418	J8
2440	I5
2441	I5
2446	K7
2447	J7
2448	K7
2449	K7
2450	J8
2451	J8
2460	I9
2461	G9
2462	H7
2463	G8
2650	F13
2651	G13
2653	F12
2654	E8
2655	E11
2656	E11
2657	F11
2658	G12
2670	N15
2671	M15
2672	M15
2673	M15
3250	D9
3251	B12
3252	B12
3253	B9
3254	B9
3257	B14
3258	B13
3259	B14
3260	B13
3261	B15
3262	B13
3263	D11
3264	D12
3265	B16
3266	D16
3267	D17
3268	B16
3269	D15
3270	D17
3271	C16
3351	D14
3352	C14
3353	D14
3354	D13
3355	D12
3356	C12
3357	D12
3358	C12
3359	C14
3360	C13
3361	B9
3362	B9
3363	C12
3364	C13
3365	C15
3366	C15
3367	B16
3368	D15
3369	D17


IONE BOARD
VOLUME DBB AND MOTOR CIRCUIT BOARD
To Power 1 & Surround Plug 1676
1376
1 = L
2 = ⊥
3 = R
4 = +11.4V
5 = -11.7V
6 = R
7 = ⊥
8 = L
9 = SP AN
10 = EQ3
11 = EQ2
12 = EQ1
13 = SURR
Selector EQ Plug 1272
To Front Plug 1456
MICRO AMPLIFIER BOARD
To Selector EQ Plug 1508
To Volume LED
DBB
ST.BY
TIMER
IR EYE
To Selector Plug 1508
1461
1 = PD2
2 = STBY
3 = +11V
4 = +25V
5 = ⊥
1462
1 = STBY
2 = +11V
3 = +25V
4 = ⊥
Only for Service
DISPLAY
LEU0067
9421

!! WARNING: RISK OF ELECTRICAL SHOCKS !!

1356	D15	3379	C9	7670	M16
1376	B15	3380	F8	7671	O16
1420	N5	3401	L8	7672	N15
1456	G7	3403	J17	8401	H12
1460	L5	3404	I14	9401	M7
1461	L16	3405	J16	9402	J4
1462	M17	3406	J17	9403	K4
1470	H4	3410	K14	9404	M17
1471	K4	3411	K15	9405	M17
1472	F6	3412	J16	9406	L17
1473	H6	3413	J14	9407	K15
1474	F14	3414	J15	9408	J15
1475	F17	3415	J16	9409	J14
1476	H14	3420	M4	9410	J14
1477	M7	3421	N4	9411	J13
1478	L7	3422	N4	9412	J13
1479	L7	3427	N5	9414	L15
1480	M14	3428	M5	9415	I14
1481	L14	3429	M5	9416	H14
1482	L14	3430	M5	9417	I12
1483	J8	3431	M5	9418	G16
1484	I9	3432	M5	9419	J11
1485	I10	3433	M5	9420	J10
1486	I12	3439	K5	9421	J10
1487	I13	3440	J6	9422	H9
1650	E7	3442	K5	9423	I9
1651	G13	3445	J5	9424	H7
1670	O10	3447	L6	9425	H7
1680	C7	3448	K6	9426	H5
1681	B7	3449	K6	9427	H5
2251	B10	3450	K6	9428	J12
2252	B11	3451	I8	9429	H6
2253	C17	3452	I8	9430	G5
2254	C16	3460	L8	9431	G5
2255	C14	3461	L8	9432	I6
2351	D14	3462	G9	9433	J9
2352	D13	3463	G9	9434	J9
2353	C14	3464	G9	9435	J6
2354	C13	3465	I8	9436	J6
2355	C12	3466	I9	9438	K11
2356	C12	3467	G9	9439	K11
2357	C12	3470	M4	9442	J6
2358	D13	3471	M4	9444	G8
2359	C14	3472	M4	9445	J11
2360	D14	3473	M4	9446	F8
2361	C16	3490	I5	9448	G6
2375	C10	3492	I8	9451	M12
2376	C9	3493	I8	9452	M12
2377	B10	3494	I8	9453	M11
2410	K15	3495	I6	9454	N6
2411	J15	3496	I6	9456	I14
2412	L16	3497	H7	9457	D10
2413	K15	3498	I4	9458	L4
2414	J16	3650	F13	9459	L11
2415	J6	3651	F12	9460	C11
2416	K16	3652	G11	9461	C10
2417	J15	3653	E8	9462	C9
2418	J8	3654	E8	9464	C17
2440	I5	3655	F11	9465	C12
2441	I5	3656	F11	9470	K4
2446	K7	3657	F11	9471	K4
2447	J7	3658	E12	9472	G16
2448	K7	3659	E12	9474	K12
2449	K7	3660	F11	9475	K12
2450	J8	3661	F11	9476	K12
2451	J8	3662	G11	9477	L12
2460	I9	3670	M15	9478	L12
2461	G9	3671	M15	9479	L12
2462	H7	3672	N15	9480	L12
2463	G8	3673	I4	9481	L12
2650	F13	3674	I5	9482	K10
2651	G13	3675	N14	9483	K10
2653	F12	5450	J7	9484	K9
2654	E8	5451	J7	9485	J9
2655	E11	5670	N16	9486	K8
2656	E11	6251	D16	9487	K8
2657	F11	6252	B15	9488	K8
2658	G12	6268	C15	9489	K9
2670	N15	6269	D16	9490	N11
2671	M15	6351	D16	9491	N11
2672	M15	6352	C16	9492	N12
2673	M15	6353	C16	9493	N13
3250	D9	6375	C9	9494	E8
3251	B12	6401	O11		
3252	B12	6402	K16		
3253	B9	6410	K14		
3254	B9	6411	L16		
3257	B14	6412	L15		
3258	B13	6413	I15		
3259	B14	6414	L16		
3260	B13	6415	K15		
3261	B15	6470	I4		
3262	B13	6471	J4		
3263	D11	6472	J4		
3264	D12	6473	J4		
3265	B16	6652	F12		
3266	D16	6670	N15		
3267	D17	7251	B11		
3268	B16	7252	B12		
3269	D15	7253	B14		
3270	D17	7254	B12		
3271	C16	7255	B15		
3351	D14	7256	B13		
3352	C14	7257	C16		
3353	D14	7258	C17		
3354	D13	7351	C12		
3355	D12	7352	D15		
3356	C12	7353	C15		
3357	D12	7354	C16		
3358	C12	7375	C9		
3359	C14	7401	L9		
3360	C13	7402	M10		
3361	B9	7403	I16		
3362	B9	7404	I7		
3363	C12	7410	L15		
3364	C13	7411	I15		
3365	C15	7460	H9		
3366	C15	7461	H8		
3367	B16	7650	F9		
3368	D15	7651	E11		
3369	D17	7652	E11		

Selector - EQ. PCB
Power 2 PCB
AF PCB
Power 1
&
Surround PCB


SELECTOR - EQUALIZER - POWER 2 and AF BOARD
POWER 1 & SURROUND BOARD
PHONO
AUX IN
AUX OUT
To CCD
VOLTAGE SELECTOR
MAINS
SPEAKERS
To Tuner
To Micro Amplifier Plug 1651
To Front Board Plug 1460
To Power 1 & Surround Board Plug 1600
To Power 1 & Surround Board Plug 1601
To Selector Equalizer Power 2 and AF Board Plug 1509
To Selector Equalizer Power 2 and AF Board Plug 1508
To Selector Equalizer Power 2 and AF Board Plug 1337
From Power 1 & Surround Board Plug 1336
To Power 2 Circuit Plug 1326
To Power 1 Circuit Plug 1335
From Power 1 Circuit Plug 1327
To Power 1 Circuit Plug 1335
To Headphone Plug 1681
To Front Board Plug 1461
7501
7523
7524
7525
7526
7527
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3104 217 03520 bl. 110 - 01
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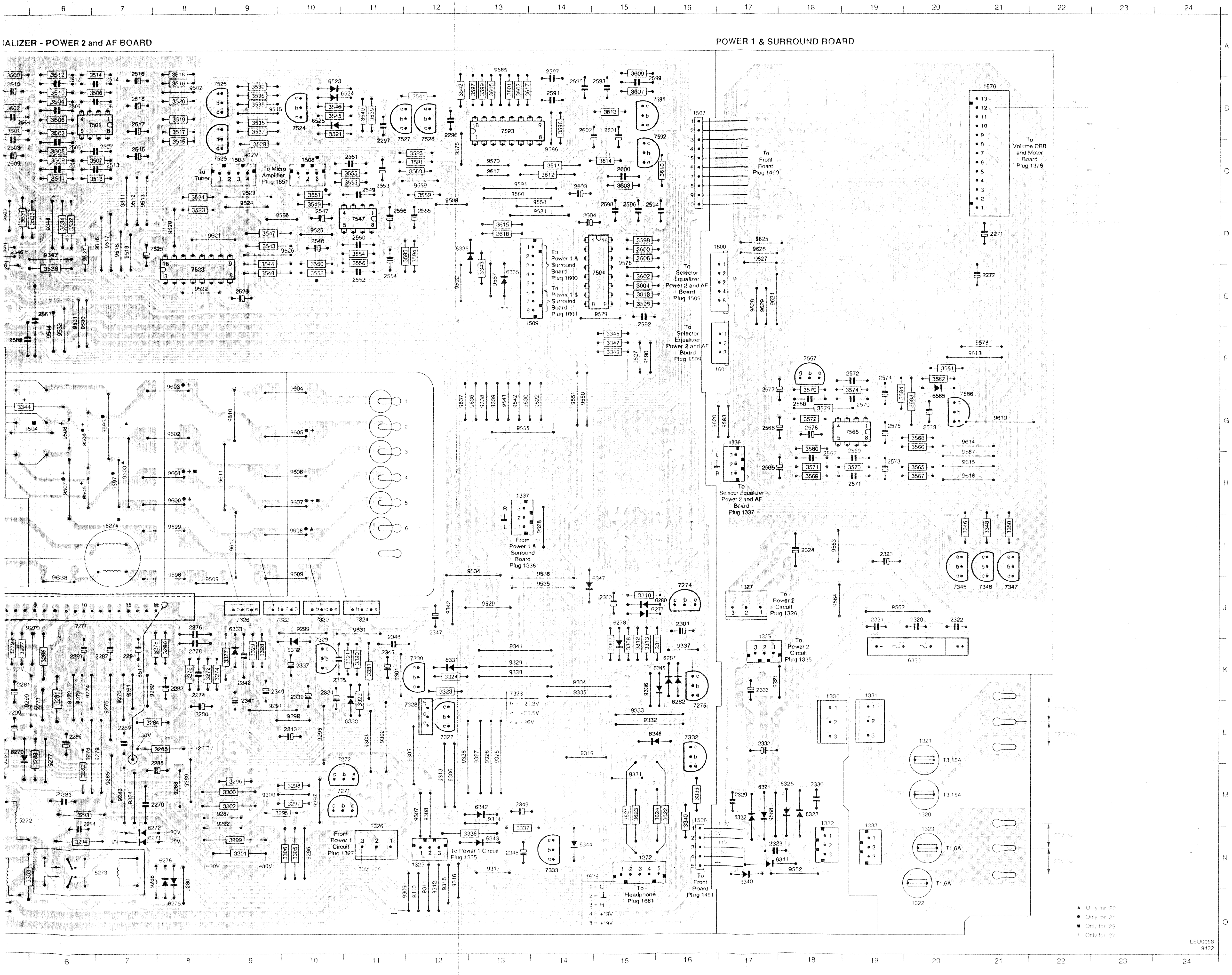
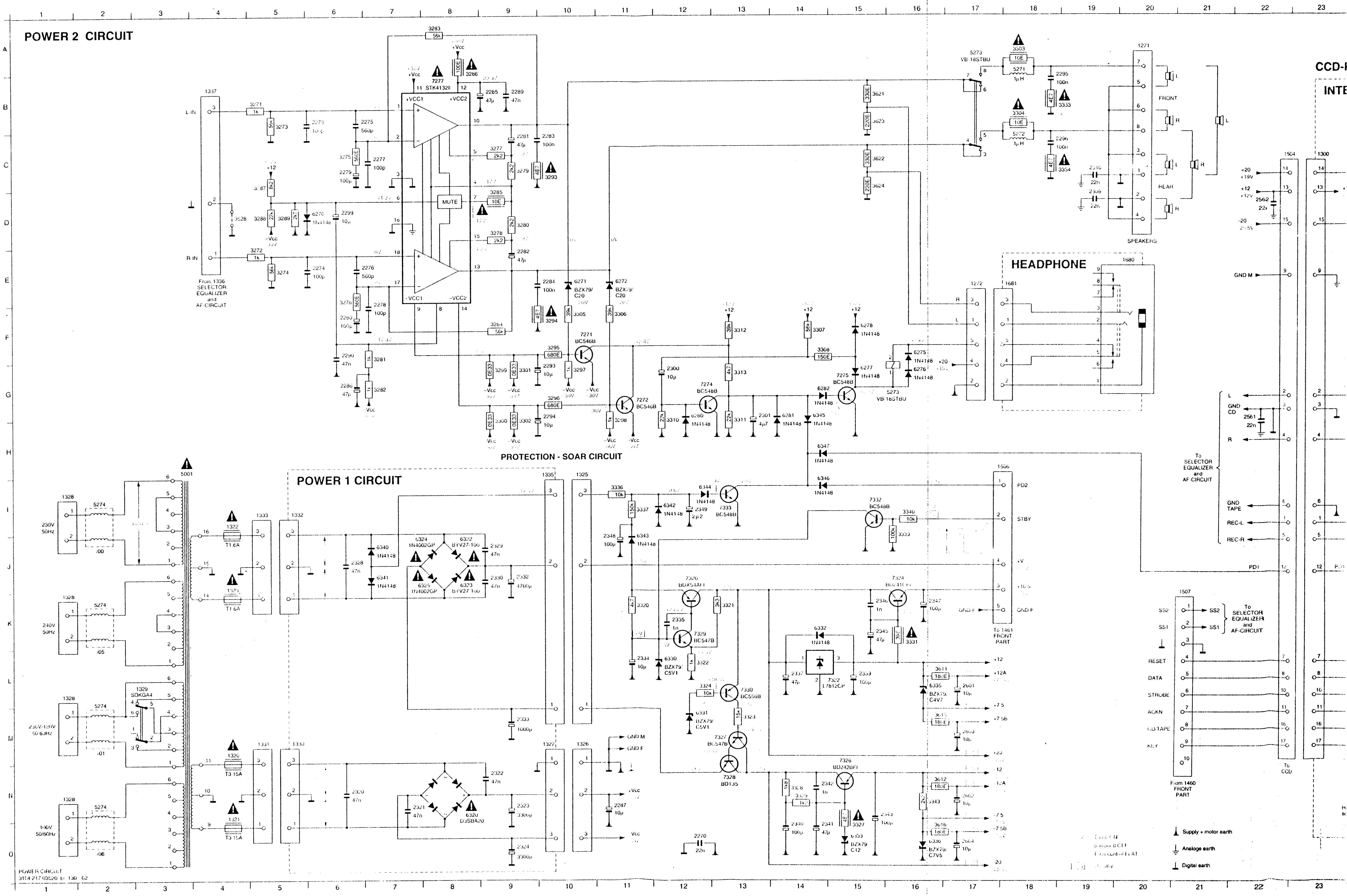
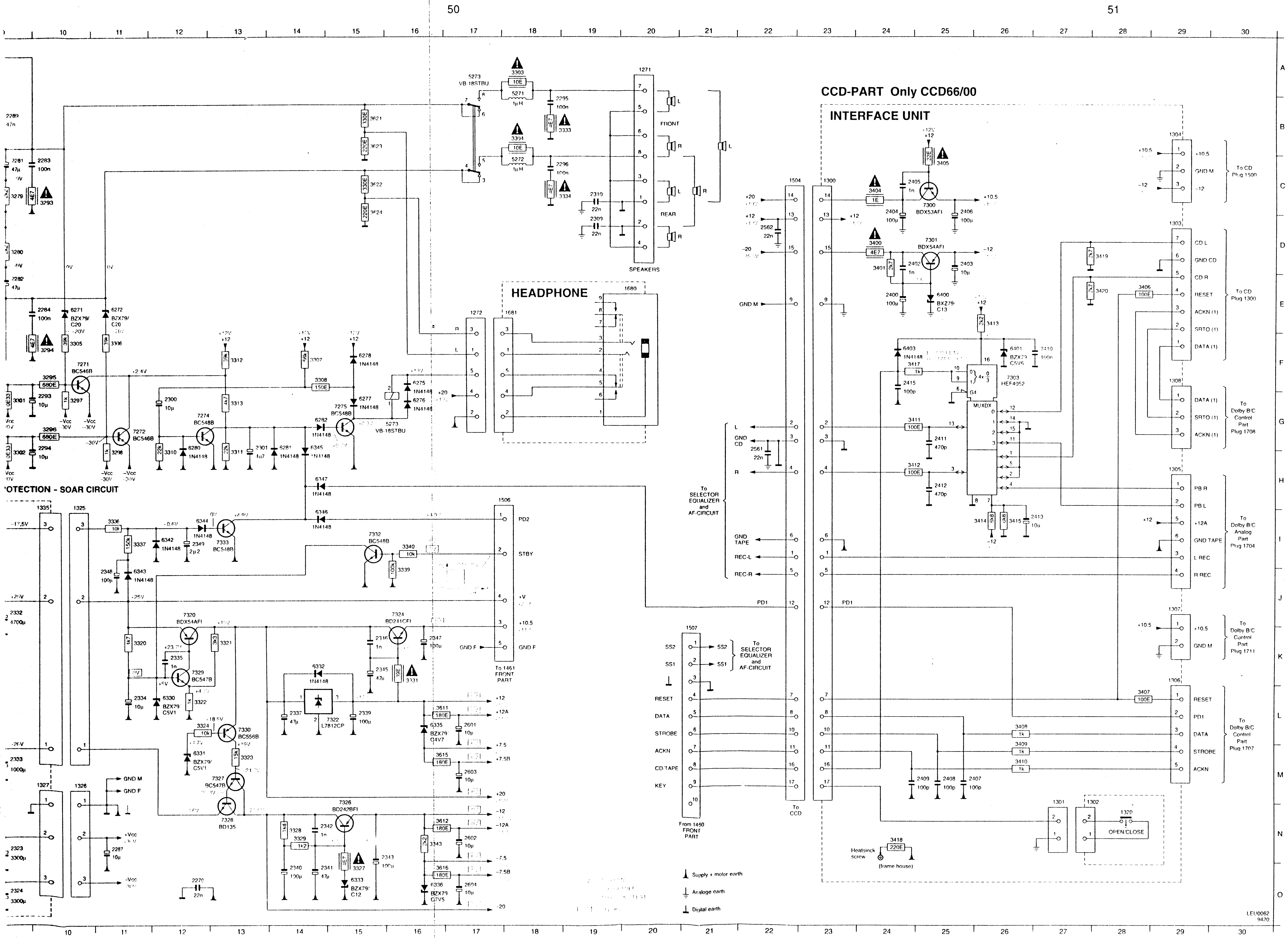

ALIZER - POWER 2 and AF BOARD
POWER 1 & SURROUND BOARD
To Tuner
To Micro Amplifier Plug 1651
To Front Board Plug 1460
To Volume DBB and Motor Board Plug 1376
To Power 1 & Surround Board Plug 1600
To Power 1 & Surround Board Plug 1601
To Selector Equalizer Power 2 and AF Board Plug 1509
To Selector Equalizer Power 2 and AF Board Plug 1337
From Power 1 & Surround Board Plug 1336
To Power 2 Circuit Plug 1326
To Power 2 Circuit Plug 1325
From Power 1 Circuit Plug 1327
To Power 1 Circuit Plug 1335
To Headphone Plug 1681
To Front Board Plug 1461
T3,15A
T1,6A
▲ Only for /20
● Only for /21
■ Only for /25
+ Only for /37
LEU0068
9422

1271	L4	2575	G19	3542	B12	7523	E8	9552	N18
1272	N15	2576	G18	3543	D9	7524	B10	9555	G13
1320	M20	2577	G17	3544	E9	7525	C8	9556	D9
1321	L20	2578	G20	3545	B10	7526	B8	9557	E13
1322	O20	2591	B14	3546	B10	7527	C11	9558	D14
1323	N20	2592	F15	3547	D9	7528	C12	9559	C12
1325	N12	2593	B15	3548	E9	7547	D11	9560	C13
1326	N11	2594	D15	3549	D10	7565	G19	9562	J19
1327	J17	2595	B14	3550	E10	7566	G20	9563	I18
1328	I5	2596	D15	3551	C10	7567	F18	9564	J18
1329	F5	2597	A14	3552	E10	7591	B15	9568	M17
1330	K18	2598	D15	3553	C11	7592	C15	9573	C13
1331	K19	2599	B15	3554	D11	7593	B13	9575	C12
1332	M18	2600	C15	3555	C11	7594	E15	9576	E15
1333	N19	2601	B15	3556	E11	8511	K7	9578	F21
1335	K17	2602	B14	3559	C12	9270	J5	9579	E15
1336	G17	2603	C14	3560	C12	9271	L6	9581	D14
1337	H13	2604	D14	3565	H20	9272	L6	9583	G17
1501	A4	3271	K5	3566	G20	9273	L6	9585	A13
1503	C9	3272	K8	3567	H20	9274	K6	9586	C14
1504	D4	3273	K4	3568	G20	9275	L7	9587	H20
1506	M16	3274	K9	3569	H18	9276	L7	9588	D12
1507	B16	3275	K5	3570	G18	9277	M6	9590	F15
1508	C10	3276	K8	3571	H18	9278	L6	9591	C13
1509	E13	3277	K5	3572	G18	9279	L7	9592	E12
1600	D16	3278	K8	3573	H19	9280	O8	9595	G7
1601	F16	3279	K5	3574	G19	9281	K7	9597	H7
1676	B21	3280	K8	3579	G18	9282	K7	9598	J8
2270	M7	3281	L6	3580	H18	9283	M7	9599	I8
2271	D21	3282	M6	3581	F20	9284	M7	9600	H8
2272	E21	3283	L5	3582	F20	9285	M7	9601	H8
2273	J4	3284	L7	3583	G20	9286	N7	9602	G8
2274	K8	3285	K6	3584	G19	9287	M8	9603	G8
2275	J5	3286	L7	3591	C12	9288	M8	9604	G10
2276	J8	3287	M5	3592	D12	9289	M8	9605	G10
2277	K5	3288	M5	3593	C12	9290	L5	9606	H10
2278	K8	3289	M6	3594	D12	9291	L9	9607	H10
2279	K5	3293	M6	3595	B14	9292	M8	9608	I10
2280	L8	3294	N6	3596	E15	9295	L10	9609	J10
2281	K5	3295	M9	3597	B13	9296	N10	9610	G9
2282	K8	3296	M9	3598	D15	9297	M10	9611	H9
2283	M6	3297	M10	3599	B13	9298	L10	9612	I9
2284	M6	3298	M10	3600	D15	9299	J10	9613	F21
2285	M7	3299	N9	3601	B13	9300	M9	9614	G20
2286	L6	3300	M9	3602	E15	9301	K11	9615	H20
2287	K7	3301	N9	3603	B13	9302	L11	9616	H20
2289	L7	3302	M9	3604	E15	9303	L11	9617	C13
2293	K6	3303	N6	3605	B13	9305	L12	9619	G21
2294	K7	3304	M5	3606	D15	9306	M12	9620	G16
2295	N5	3305	N10	3607	B15	9307	M12	9622	G14
2296	M5	3306	N10	3608	C15	9308	M12	9624	E17
2297	C11	3307	K15	3609	A15	9309	O12	9625	D17
2298	B12	3308	K15	3610	C16	9310	O12	9626	D17
2299	L5	3310	J15	3611	C14	9311	O12	9627	D17
2300	J15	3311	K16	3612	C14	9312	O12	9628	E17
2301	J16	3312	K15	3613	B15	9313	M12	9629	E17
2309	O5	3313	K15	3614	C15	9314	M13	9630	G13
2310	O5	3320	K11	3615	D13	9315	O12	9631	J11
2320	J20	3321	K11	3616	D13	9316	N12	9636	G13
2321	J19	3322	L11	3617	B14	9317	N13	9637	G12
2322	J20	3323	K12	3618	E15	9319	L14	9638	J6
2323	I19	3324	K12	3621	M15	9321	K17		
2324	I18	3327	K9	3622	M16	9325	M13		
2328	N17	3328	K9	3623	M15	9326	M13		
2329	M17	3329	K9	3624	M16	9327	M13		
2330	M18	3331	K11	5271	N5	9328	M12		
2332	L17	3333	N5	5272	M5	9329	K13		
2333	K17	3334	M5	5273	N6	9330	K13		
2334	K10	3336	N12	5274	I7	9331	M15		
2335	K10	3337	N13	6270	L5	9332	L15		
2337	K10	3339	M16	6271	N7	9333	L15		
2339	K10	3340	N16	6272	N7	9334	K14		
2340	K9	3343	E13	6275	O8	9335	K14		
2341	L9	3344	G5	6276	N8	9336	K15		
2342	K9	3345	F15	6277	J15	9337	K16		
2343	L10	3346	I21	6278	J15	9338	G13		
2345	K11	3347	F15	6280	J16	9339	G13		
2346	K11	3348	I21	6281	K16	9341	K13		
2347	J12	3349	F15	6282	L16	9342	J12		
2348	N13	3350	I21	6320	K20	9346	D5		
2349	M13	3500	A5	6322	M17	9347	D6		
2503	C5	3501	B5	6323	M18	9348	D6		
2504	B5	3502	B5	6324	M17	9349	C5		
2505	C6	3503	B6	6325	M18	9501	D5		
2506	B6	3504	B6	6330	L11	9502	B8		
2507	C7	3505	C6	6331	K12	9503	H7		
2508	B7	3506	B6	6332	K10	9504	G5		
2509	C5	3507	C6	6333	J9	9505	H6		
2510	B5	3508	B6	6335	E13	9506	G6		
2511	C6	3509	C6	6336	D12	9507	H6		
2512	B6	3510	B6	6340	N17	9508	G6		
2513	C7	3511	C6	6341	N17	9509	J8		
2514	B7	3512	A6	6342	M13	9511	D7		
2515	C7	3513	C6	6343	N13	9512	D7		
2516	A7	3514	A6	6344	N14	9513	D7		
2517	B7	3515	C8	6345	K15	9515	B9		
2518	B7	3516	B8	6346	L15	9516	D7		
2525	D7	3517	B8	6347	J14	9517	D7		
2526	E9	3518	A8	6523	B10	9518	D7		
2547	D10	3519	B8	6524	B10	9519	D7		
2548	D10	3520	B8	6525	B10	9520	D8		
2549	C11	3521	B10	6565	G20	9521	D8		
2550	D11	3523	D8	7271	M10	9522	E8		
2551	C11	3524	C8	7272	L10	9523	C9		
2552	E11	3525	D5	7274	J16	9524	D9		
2553	C11	3526	E5	7275	L16	9525	D10		
2554	E11	3527	D6	7277	J6	9526	D10		
2555	D12	3528	E6	7320	J10	9527	F15		
2556	D11	3529	C9	7322	J9	9528	I14		
2561	E6	3530	B9	7324	J11	9529	J13		
2562	F5	3531	D5	7326	J9	9530	F6		
2565	H17	3532	D6	7327	L12	9531	F6		
2566	G17	3533	D6	7328	L11	9532	F6		
2567	H18	3534	D6	7329	K10	9534	I12		
2568	G18	3535	B9	7330	K12	9535	J14		
2569	H19	3536	B9	7332	L16	9536	J14		
2570	G19	3537	B9	7333	N14	9541	G13		
2571	H19	3538	B9	7345	J20	9542	G13		
2572	F19	3539	B11	7346	J21	9544	F6		
2573	H19	3540	B11	7347	J21	9550	G14		
2574	F19	3541	B12	7501	B6	9551	G14		

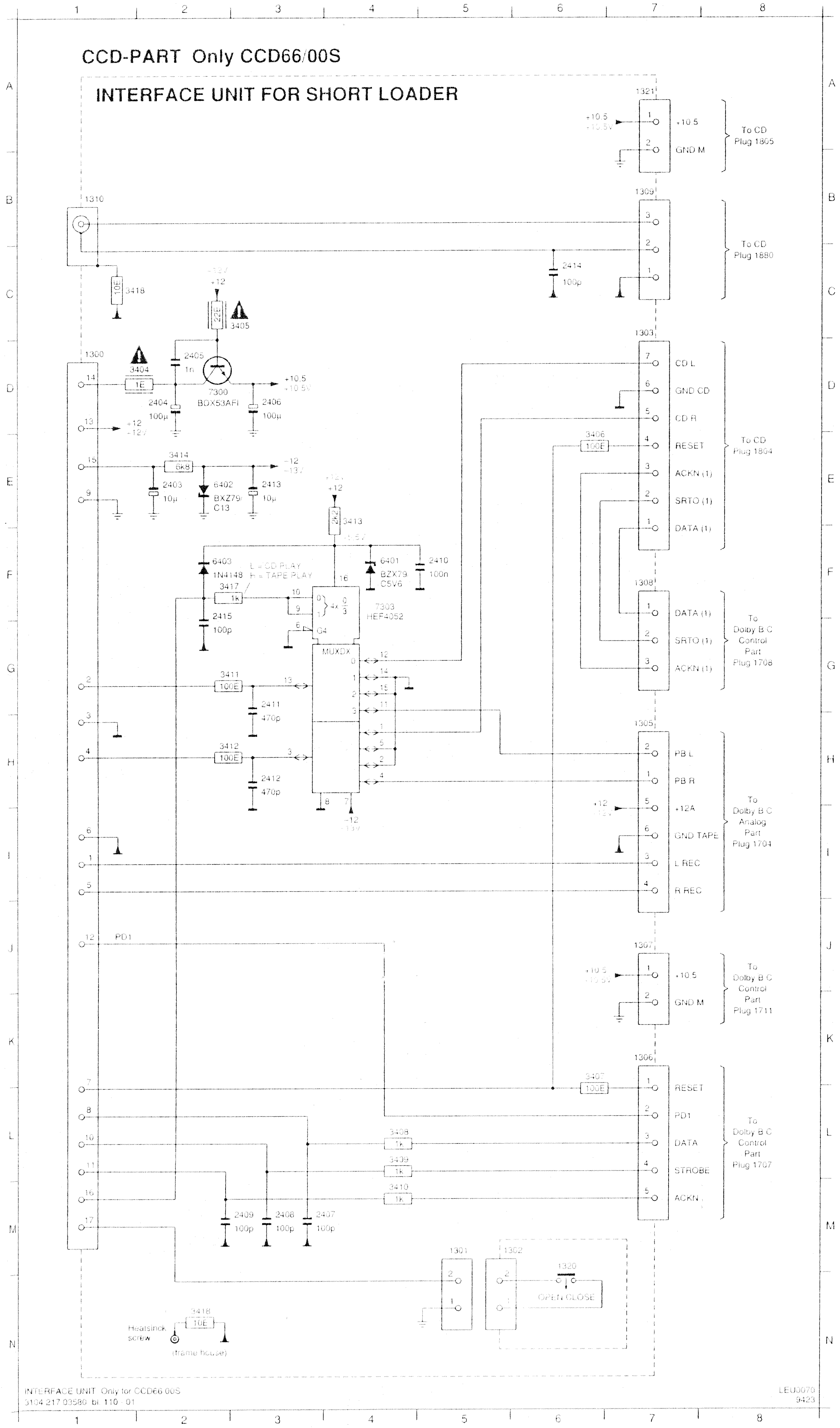

POWER 2 CIRCUIT
POWER 1 CIRCUIT
PROTECTION - SOAR CIRCUIT
HEADPHONE
CCD-
INTE
7277
STK4132II
+VCC1
+VCC2
-VCC1
-VCC2
MUTE
L IN
R IN
From 1336
SELECTOR
EQUALIZER
and
AF-CIRCUIT
1337
5273
VB 18STBU
1271
FRONT
REAR
SPEAKERS
1272
1681
1680
7271
BC546B
7272
BC546B
7274
BC548B
7275
BC548B
6271
BZX79/
C20
6272
BZX79/
C20
5001
1328
230V
50Hz
240V
50Hz
230V/120V
50-60Hz
100V
50/60Hz
5274
1329
SDKGA4
1322
T1.6A
1323
T1.6A
1320
T3.15A
1321
T3.15A
1333
1332
1331
1330
1335
1325
1327
1326
6324
1N4002GP
6322
BYV27-100
6325
1N4002GP
6323
BYV27-100
6320
D3SBA20
7320
BDX54AH
7329
BC547B
7330
BC556B
7327
BC547B
7328
BD135
7324
BD241C
7326
BD242BFI
7322
L7812CP
7332
BC548B
7333
BC548B
1506
PD2
STBY
+V
GND F
To 1461
FRONT
PART
GND M
GND F
1507
SS2
SS1
RESET
DATA
STROBE
ACKN
CD/TAPE
KEY
From 1460
FRONT
PART
To
SELECTOR
EQUALIZER
and
AF-CIRCUIT
1504
1300
To
CCD
GND CD
GND TAPE
REC-L
REC-R
PD1
Supply + motor earth
Analoge earth
Digital earth
POWER CIRCUIT
3104 217 05520 ... 130 ... 62


50
51
CCD-PART Only CCD66/00
INTERFACE UNIT
HEADPHONE
PROTECTION - SOAR CIRCUIT
SPEAKERS
FRONT
REAR
To CD Plug 1500
To CD Plug 1300
To Dolby B/C Control Part Plug 1708
To Dolby B/C Analog Part Plug 1704
To Dolby B/C Control Part Plug 1711
To Dolby B/C Control Part Plug 1707
To SELECTOR EQUALIZER and AF-CIRCUIT
To 1461 FRONT PART
From 1460 FRONT PART
To CCD
MUXDX
7303 HEF4052
7322 L7812CP
OPEN/CLOSE
Heatsinck screw
(frame house)
Supply + motor earth
Analoge earth
Digital earth
LEU0062
9420

1271	A20	3287	C5	7330	L13
1272	E17	3288	D5	7332	I15
1300	C23	3289	D5	7333	I13
1301	M27	3293	C10	9528	D4
1302	M27	3294	F10		
1303	D29	3295	F10		
1304	B29	3296	G10		
1305	H29	3297	G10		
1306	K29	3298	H11		
1307	J29	3299	G9		
1308	F29	3300	H9		
1320	N28	3301	G9		
1320	M4	3302	H9		
1321	N4	3303	A18		
1322	I4	3304	B18		
1323	J4	3305	F10		
1325	H10	3306	F11		
1326	M10	3307	F14		
1327	M10	3308	F14		
1328	K1	3310	H12		
1328	I1	3311	H13		
1328	N1	3312	F13		
1328	L1	3313	G13		
1329	L3	3320	K11		
1330	M5	3321	K13		
1331	M5	3322	L12		
1332	I5	3323	M13		
1333	I5	3324	L12		
1335	H10	3327	O15		
1337	B4	3328	N14		
1504	C22	3329	N14		
1506	H17	3331	K16		
1507	K21	3333	B18		
1680	E20	3334	C18		
1681	E18	3336	I11		
2270	O12	3337	I11		
2273	B6	3339	J16		
2274	E6	3340	I16		
2275	B6	3343	N16		
2276	E6	3400	D24		
2277	C7	3401	D24		
2278	F7	3404	C24		
2279	C6	3405	C25		
2280	F6	3406	F28		
2281	C9	3407	L28		
2282	E9	3408	L26		
2283	C10	3409	M26		
2284	E10	3410	M26		
2285	B9	3411	G24		
2286	G6	3412	H24		
2287	N11	3413	E26		
2289	B9	3414	I26		
2290	F6	3415	I26		
2293	G10	3417	F24		
2294	G10	3418	N24		
2295	B18	3419	D28		
2296	C18	3420	E28		
2299	D6	3611	L16		
2300	G12	3612	N16		
2301	G13	3615	M16		
2309	D19	3616	O16		
2310	C19	3621	B15		
2320	N6	3622	C15		
2321	N7	3623	B15		
2322	N9	3624	D15		
2323	N9	5001	H3		
2324	O9	5271	A18		
2328	J6	5272	C18		
2329	J9	5273	G16		
2330	J9	5273	A17		
2332	J9	5274	I2		
2333	M9	5274	N2		
2334	L11	5274	L2		
2335	K12	5274	K2		
2337	L14	6270	D6		
2339	L15	6271	E10		
2340	O14	6272	E11		
2341	O14	6275	F16		
2342	N14	6276	G16		
2343	N15	6277	G15		
2345	K15	6278	F15		
2346	K15	6280	G12		
2347	K16	6281	G14		
2348	J11	6282	G14		
2349	I12	6320	N8		
2400	E24	6322	J8		
2402	D24	6323	J8		
2403	D25	6324	J7		
2404	C24	6325	J7		
2405	C24	6330	L12		
2406	C25	6331	M12		
2407	M25	6332	K14		
2408	M25	6333	O15		
2409	M25	6335	L16		
2410	F27	6336	O16		
2411	G25	6340	J7		
2412	H25	6341	J7		
2413	I26	6342	I12		
2415	F24	6343	J11		
2561	H22	6344	I12		
2562	D22	6345	G14		
2601	L17	6346	I14		
2602	N17	6347	H14		
2603	M17	6400	E25		
2604	O17	6401	F26		
3271	B5	6403	F24		
3272	E5	7271	F10		
3273	B5	7272	G11		
3274	E5	7274	G12		
3275	C6	7275	G15		
3276	E6	7277	B8		
3277	C9	7300	C25		
3278	D9	7301	D25		
3279	C9	7303	F26		
3280	D9	7320	J12		
3281	F7	7322	L14		
3282	G7	7324	J16		
3283	A8	7326	M15		
3284	F9	7327	M13		
3285	D9	7328	N13		
3286	B8	7329	K12		

CCD-PART Only CCD66/00S

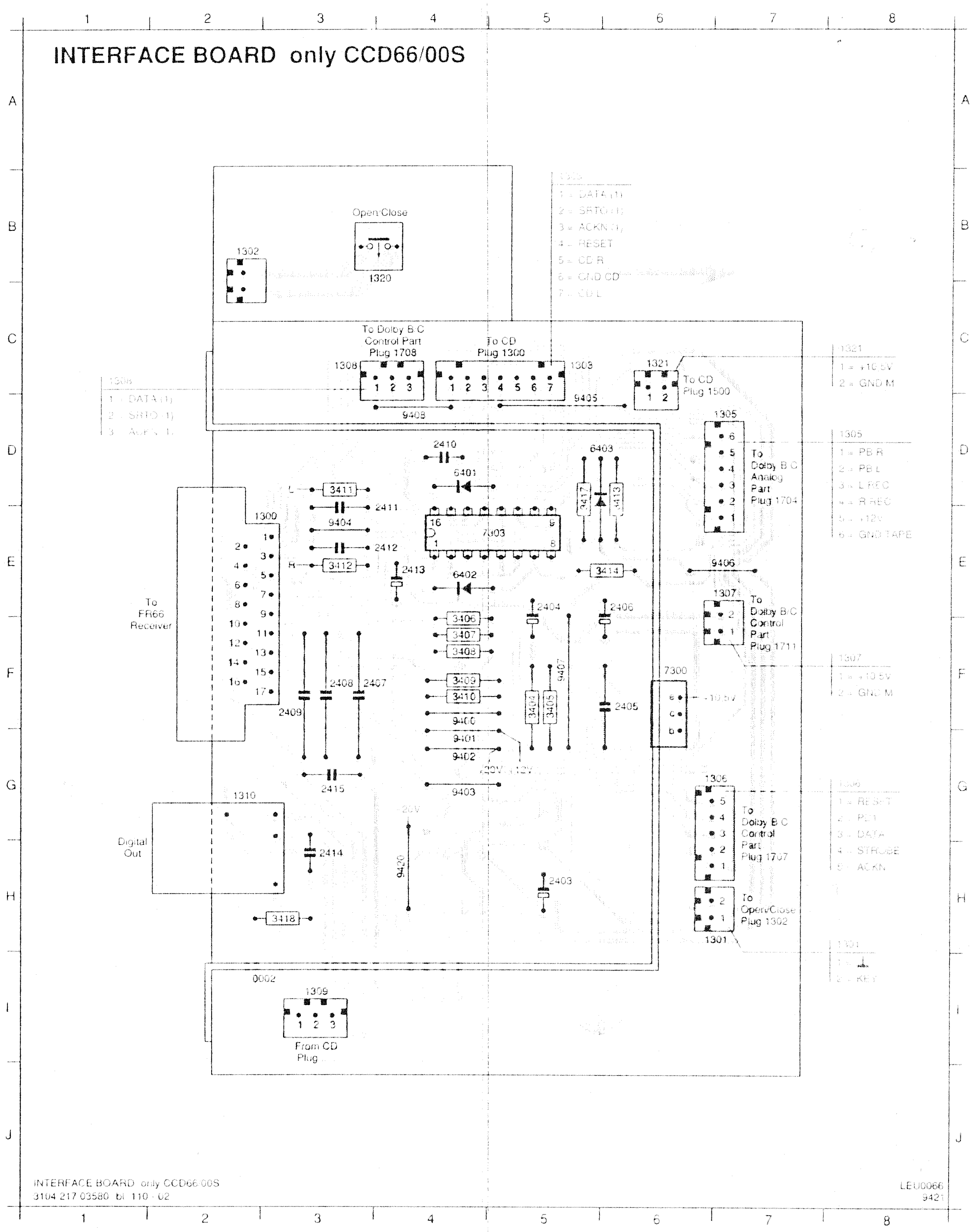
INTERFACE UNIT FOR SHORT LOADER


1310
3418
10E
1321
+10.5
GND M
To CD Plug 1865
1309
To CD Plug 1880
2414
100p
3405
2405
1n
7300
BDX53AF!
+10.5
2404
100µ
2406
100p
+12
-12
3414
6k8
2403
10µ
6402
BZX79-C13
2413
10µ
3404
1E
1300
1303
CD L
GND CD
CD R
RESET
ACKN (1)
SRTO (1)
DATA (1)
To CD Plug 1804
3406
100E
3413
6403
1N4148
L = CD PLAY
H = TAPE PLAY
3417
1k
2415
100p
6401
BZX79-C5V6
2410
100n
7303
HEF4052
MUXDX
1308
To Dolby B C Control Part Plug 1708
3411
100E
2411
470p
3412
100E
2412
470p
1305
PB L
PB R
+12A
GND TAPE
L REC
R REC
To Dolby B C Analog Part Plug 1704
PD1
1307
To Dolby B C Control Part Plug 1711
1306
3407
100E
RESET
PD1
DATA
STROBE
ACKN
3408
1k
3409
1k
3410
1k
To Dolby B C Control Part Plug 1707
2409
100p
2408
100p
2407
100p
1301
1302
1320
OPEN CLOSE
Heatsinck screw
(frame house)
INTERFACE UNIT Only for CCD66/00S
3104 217 03580 bl. 110 - 01
LEU0070
9423

1300	D1
1301	M5
1302	M5
1303	C7
1305	H7
1306	K7
1307	J7
1308	F7
1309	B7
1310	B1
1320	M6
1321	A7
2403	E2
2404	D2
2405	D2
2406	D3
2407	M3
2408	M3
2409	M3
2410	F5
2411	G3
2412	H3
2413	E3
2414	C6
2415	F2
3404	D1
3405	C2
3406	E6
3407	K6
3408	L4
3409	L4
3410	M4
3411	G2
3412	H2
3413	E4
3414	E2
3417	F2
3418	C1
3418	N2
6401	F4
6402	E2
6403	F2
7300	D2
7303	F4

0002	I2	1305	D6	1310	G2	2405	F6	2410	D4	2415	G3	3408	F4	3413	E6	6402	E4	9401	G4	9406	E6
1300	E2	1306	G6	1320	C3	2406	E6	2411	E4	3404	F5	3409	F4	3414	E5	6403	D5	9402	G4	9407	F5
1301	H6	1307	E6	1321	C6	2407	F3	2412	E3	3405	F5	3410	F4	3417	E5	7300	F6	9403	G4	9408	D4
1302	B2	1308	C3	2403	H5	2408	F3	2413	E4	3406	F4	3411	D3	3418	H3	7303	E4	9404	E3	9420	H4
1303	C5	1309	I3	2404	E5	2409	F3	2414	H3	3407	F4	3412	E3	6401	D4	9400	F4	9405	D5		

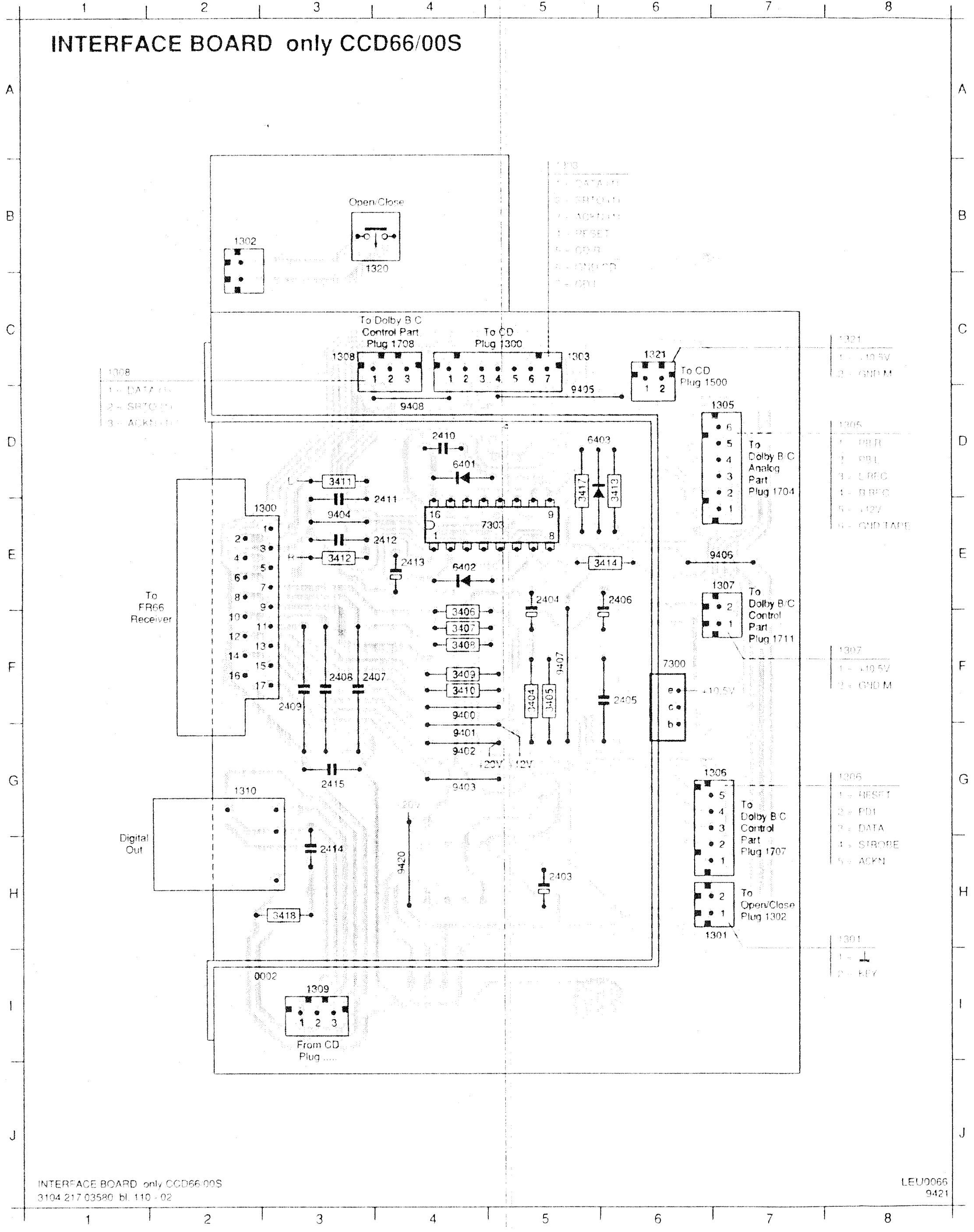
INTERFACE BOARD only CCD66/00S


Open/Close
1302
1320
To Dolby B C Control Part Plug 1708
To CD Plug 1300
1308
1303
1321
To CD Plug 1500
9408
9405
1305
To Dolby B C Analog Part Plug 1704
2410
6401
6403
3411
2411
9404
2412
3412
2413
7303
6402
3417
3413
3414
9406
1309
To FF66 Receiver
3406
3407
3408
2404
2406
1307
To Dolby B C Control Part Plug 1711
7300
+10.5V
2409
2408
2407
3409
3410
9400
9401
9402
9403
2405
2415
1310
Digital Out
2414
9420
2403
1306
To Dolby B C Control Part Plug 1707
To Open/Close Plug 1302
1301
3418
0002
1359
From CD Plug
INTERFACE BOARD only CCD66/00S
3104 217 03580 bl. 110 - 02
LEU0066
9421

1300	D1
1301	M5
1302	M5
1303	C7
1305	H7
1306	K7
1307	J7
1308	F7
1309	B7
1310	B1
1320	M6
1321	A7
2403	E2
2404	D2
2405	D2
2406	D3
2407	M3
2408	M3
2409	M3
2410	F5
2411	G3
2412	H3
2413	E3
2414	C6
2415	F2
3404	D1
3405	C2
3406	E6
3407	K6
3408	L4
3409	L4
3410	M4
3411	G2
3412	H2
3413	E4
3414	E2
3417	F2
3418	C1
3418	N2
6401	F4
6402	E2
6403	F2
7300	D2
7303	F4

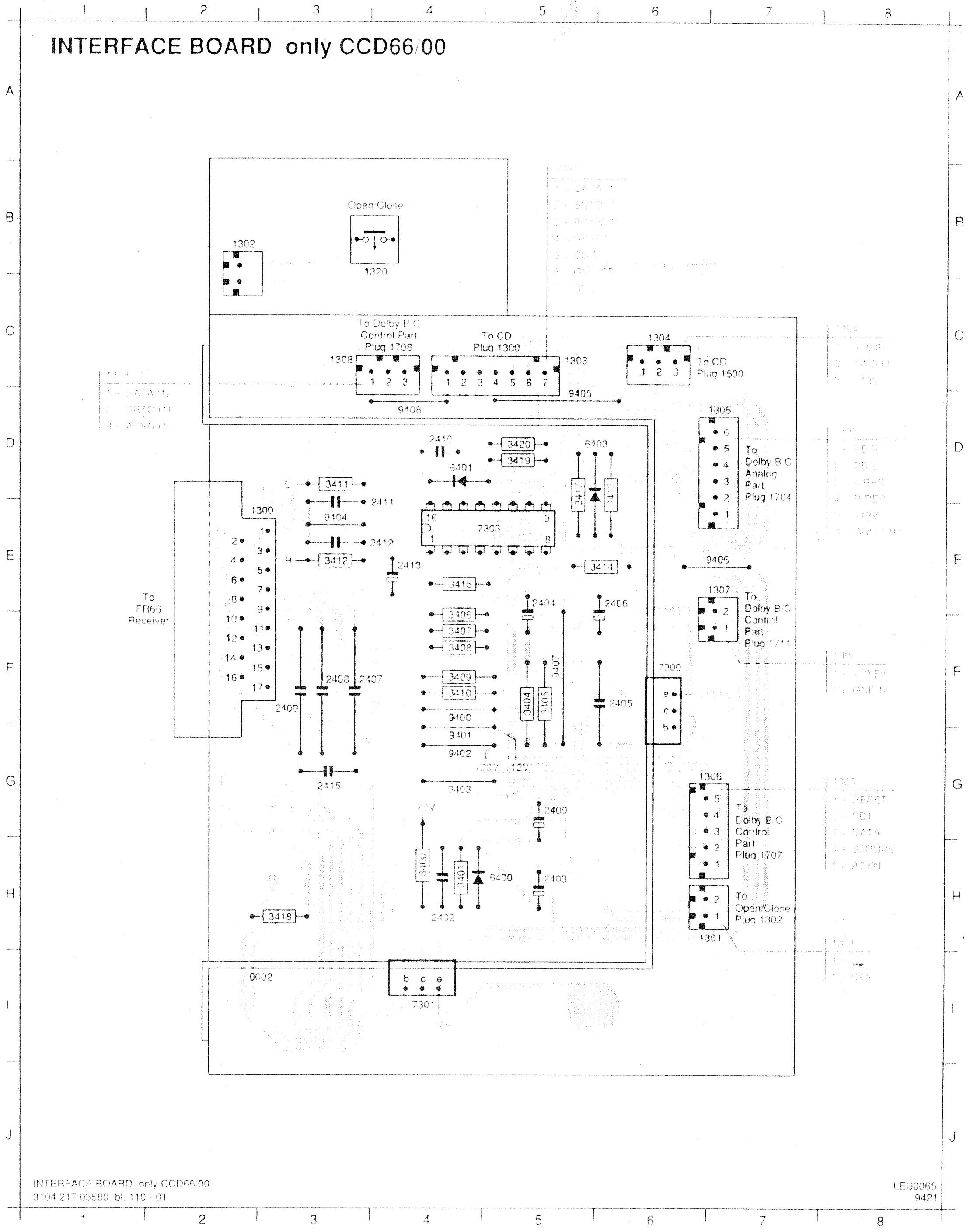
0002	I2	1305	D6	1310	G2	2405	F6	2410	D4	2415	G3	3408	F4	3413	E6	6402	E4	9401	G4	9406	E6
1300	E2	1306	G6	1320	C3	2406	E6	2411	E4	3404	F5	3409	F4	3414	E5	6403	D5	9402	G4	9407	F5
1301	H6	1307	E6	1321	C6	2407	F3	2412	E3	3405	F5	3410	F4	3417	E5	7300	F6	9403	G4	9408	D4
1302	B2	1308	C3	2403	H5	2408	F3	2413	E4	3406	F4	3411	D3	3418	H3	7303	E4	9404	E3	9420	H4
1303	C5	1309	I3	2404	E5	2409	F3	2414	H3	3407	F4	3412	E3	6401	D4	9400	F4	9405	D5		

INTERFACE BOARD only CCD66/00S


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
Open/Close
1320
1302
To Dolby B/C
Control Part
Plug 1708
To CD
Plug 1300
1308
1303
1321
To CD
Plug 1500
9408
9405
1305
To
Dolby B/C
Analog
Part
Plug 1704
2410
6401
6403
3411
2411
9404
2412
3412
2413
7303
6402
3417
3413
3414
9406
1300
To
FR66
Receiver
3406
3407
3408
2404
2406
1307
To
Dolby B/C
Control
Part
Plug 1711
3409
3410
3404
3405
3407
2405
7300
+16.5V
9400
9401
9402
9403
+22V
+12V
2409
2408
2407
2415
1310
Digital
Out
2414
9420
2403
3418
1306
To
Dolby B/C
Control
Part
Plug 1707
To
Open/Close
Plug 1302
1301
0002
1309
1 2 3
From CD
Plug .....

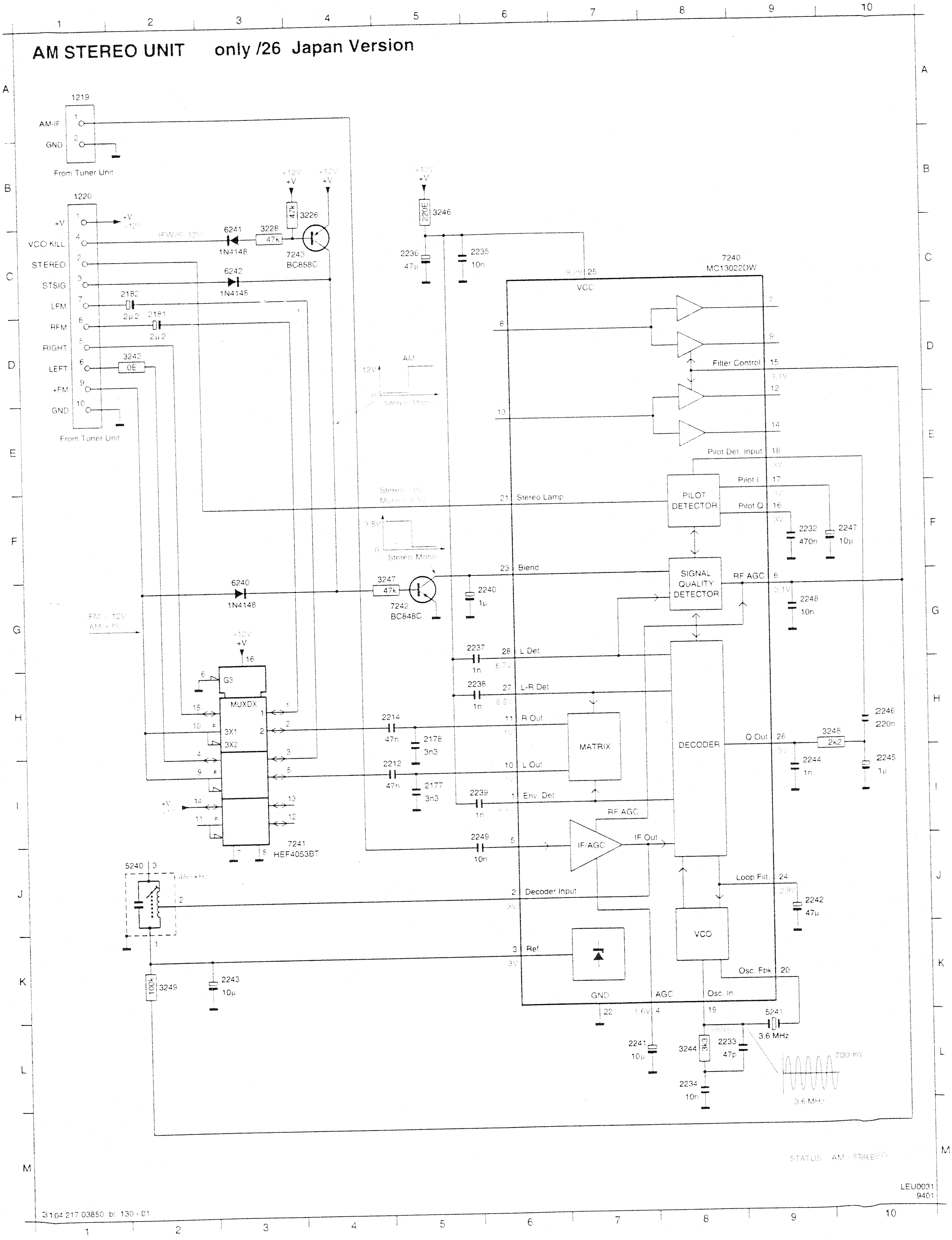
0002	I2	1305	D6	2402	H4	2408	F3	2415	G3	3407	F4	3413	E6	3420	D5	7303	E4	9405	D5				
1300	E2	1306	G6	2403	H5	2409	F3	3400	H4	3408	F4	3414	E5	6400	H5	9400	F4	9406	E6				
1301	H6	1307	E6	2404	E5	2410	D4	3401	H4	3409	F4	3415	E4	6401	D4	9401	G4	9407	F5				
1302	B2	1308	C3	2405	F6	2411	E4	3404	F5	3410	F4	3417	E5	6403	D5	9402	G4	9408	D4				
1303	C5	1320	C3	2406	E6	2412	E3	3405	F5	3411	D3	3418	H3	7300	F6	9403	G4						
1304	C6	2400	G5	2407	F3	2413	E4	3406	F4	3412	E3	3419	D5	7301	I4	9404	E3						

INTERFACE BOARD only CCD66/00


1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
Open/Close
1320
1302
To Dolby B/C
Control Part
Plug 1708
To CD
Plug 1300
1308
1303
1304
To CD
Plug 1500
9408
9405
1305
To
Dolby B/C
Analog
Part
Plug 1704
2410
3420
3419
6401
6403
3417
3413
3411
2411
9404
2412
3412
2413
7303
3414
9406
3415
1300
To
FR66
Receiver
3406
3407
3408
2404
2406
1307
To
Dolby B/C
Control
Part
Plug 1711
3409
3410
3404
3405
3407
2405
7300
9400
9401
9402
9403
+22V
+12V
2409
2408
2407
2415
2400
3400
3401
6400
2403
2402
3418
1306
To
Dolby B/C
Control
Part
Plug 1707
To
Open/Close
Plug 1302
1301
0002
b c e
7301

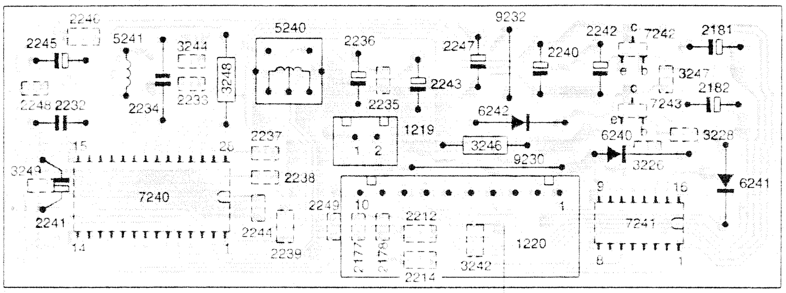
1219	A1	2181	C2	2232	F9	2236	C5	2240	G6	2244	I9	2248	G9	3242	D2	3248	H9	6240	G3	7241	J3
1220	B1	2182	C2	2233	L8	2237	G5	2241	L7	2245	I10	2249	I5	3244	L8	3249	K2	6241	C3	7242	G5
2177	I5	2212	I4	2234	L8	2238	H5	2242	J9	2246	H10	3226	B4	3246	B5	5240	J2	6242	C3	7243	C3
2178	H5	2214	H4	2235	C6	2239	I5	2243	K3	2247	F10	3228	C3	3247	G4	5241	L9	7240	C8		

AM STEREO UNIT only /26 Japan Version


1219
AM-IF
GND
From Tuner Unit
1220
+V
VCO KILL
STEREO
STSIG
LFM
RFM
RIGHT
LEFT
+FM
GND
From Tuner Unit
+12V
6241
1N4148
3228
47k
3226
7243
BC858C
6242
1N4148
2182
2µ2
2181
2µ2
3242
0E
3246
220E
2236
47µ
2235
10n
7240
MC13022DW
VCC
Filter Control
Pilot Det. Input
Pilot I
Pilot Q
PILOT DETECTOR
Stereo Lamp
Stereo 0V
Mono 5.5V
AM
Stereo Mono
2232
470n
2247
10µ
Blend
SIGNAL QUALITY DETECTOR
RF AGC
2248
10n
6240
1N4148
3247
47k
7242
BC848C
2240
1µ
FM 12V
AM 0V
2237
1n
L Det
2238
1n
L-R Det
R Out
L Out
Env. Det
MATRIX
DECODER
Q Out
3248
2k2
2246
220n
2244
1n
2245
1µ
MUXDX
G3
3X1
3X2
7241
HEF4053BT
2214
47n
2178
3n3
2212
47n
2177
3n3
2239
1n
2249
10n
IF/AGC
IF Out
Loop Filt.
2242
47µ
5240
450 kHz
Decoder Input
Ref
VCO
Osc. Fbk
GND
AGC
Osc. In
2243
10µ
3249
100k
2241
10µ
3244
3k3
2233
47p
5241
3,6 MHz
2234
10n
700 mV
3.6 MHz
STATUS AM-STEREO
LEU0031
9401
3104 217 03850 bl. 130 - 01

1219	B4	2182	B6	2234	B2	2239	C3	2244	C3	2249	C3	3246	B4	5241	B2	7241	C5
1220	C4	2212	C4	2235	B3	2240	B5	2245	B1	3226	B5	3247	B5	6240	B5	7242	B5
2177	C3	2214	C4	2236	B3	2241	C1	2246	A1	3228	B6	3248	B2	6241	C6	7243	B5
2178	C3	2232	B1	2237	B3	2242	B5	2247	B4	3242	C4	3249	B1	6242	B4	9230	B4
2181	B6	2233	B2	2238	B3	2243	B4	2248	B1	3244	B2	5240	B3	7240	C2	9232	A4

AM Stereo Board component side view


2246
2245
5241
3244
3248
5240
2236
9232
2247
2242
c
7242
2181
2240
e
b
3247
2248
2232
2233
2234
2235
2243
c
2182
7243
6242
e
6240
b
3228
1219
1
2
3246
9230
3226
15
28
2237
3249
2238
6241
7240
2249
10
1
9
16
2212
7241
2241
14
1
2244
2239
2177
2178
2214
3242
1220
8
1

1220

1 = +12V 6 = LEFT
2 = STEREO 7 = LFM
3 = STSIG 8 = RFM
4 = VCO KILL 9 = +FM
5 = RIGHT 10 = ⏚

1219	C4	2182	C6	2234	C2	2239	B3	2244	B3	2249	C3	3246	C4	5241	D2	7241	B5
1220	B4	2212	C4	2235	C3	2240	D5	2245	D1	3226	C5	3247	C5	6240	C5	7242	D5
2177	B3	2214	B4	2236	D3	2241	B1	2246	D1	3228	C6	3248	C2	6241	C6	7243	C5
2178	B3	2232	C1	2237	C3	2242	D5	2247	D4	3242	B4	3249	C1	6242	C4	9230	C4
2181	D6	2233	C2	2238	C3	2243	C4	2248	C1	3244	D2	5240	D3	7240	C2	9232	D4

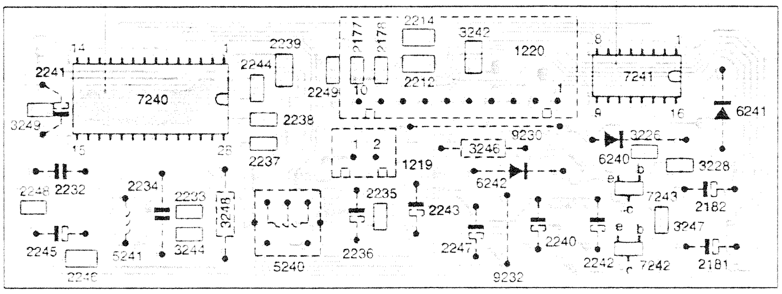
AM Stereo Board copper side view

7240

1 = 8,5V 15 = 3,1V 23 = STEREO = 3,5V
2 = 3V 16 = 3V MONO = 0V
3 = 3V 17 = 3V 24 = 2,9V
4 = 1,6V 18 = 3V 25 = 9,2V
6 = 3,1V 21 = STEREO = 0V 26 = 3V
10 = 1V MONO = 5,5V 27 = 8,5V
11 = 1V 22 = ⏚ 28 = 8,7V

7241

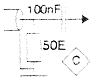
6,7,8 = ⏚
9,10 = FM = +12V
AM = 0V
14,16 = +12V


2214
2177
2178
3242
14
1
2239
1220
8
1
2241
2244
7241
2249
10
2212
1
7240
9
16
6241
3249
2238
9230
15
28
1
2
3226
2237
1219
3246
6240
3228
6242
e
b
2234
2233
2235
7243
2182
2248
2232
3248
2243
c
3247
2240
2245
5241
3244
5240
2236
2247
e
b
2246
2242
c
7242
2181
9232

3104 217 03850 bl 110 - 01

LEU0034
9403

TUNER MINI 94 Adjustment Table (FM.MW.LW with Frame antenna)

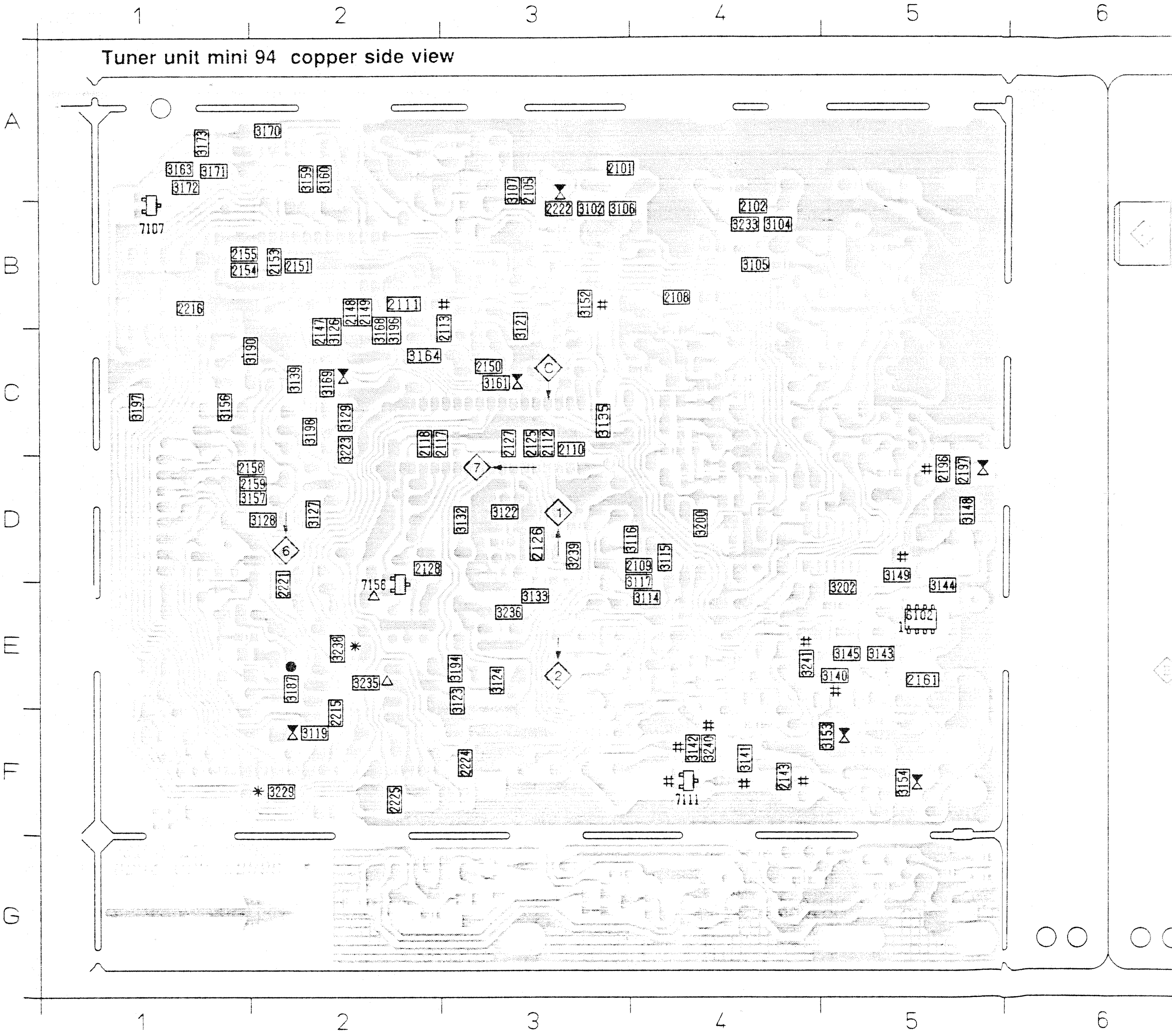
Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM 87.5 - 108MHz (50)			108 MHz	check	6	7.....9V
			87.5MHz	check		1.3.....2V
LW 153 - 279kHz (3)			279kHz	5108		8.5V ± 0.1V
			153kHz	check		0.7.... 1.5V
MW 522 - 1611kHz (9)			1611kHz	2142		8V ± 0.1V
			522kHz	check		0.7.....1.7V
FM IF						
FM	98 MHz 1mV mod = 1kHz Δf = 75kHz	A	98MHz	5105	1 2	0V ± 20mV
STEREO CROSSTALK						
FM	98 MHz 1mV 90% L + 9% pilot	A	98MHz	check	3	low < 1V
				3131	4	Right channel min.
SEARCH SENSITIVITY						
FM	98 MHz 12μV mod = 1kHz Δf = 75kHz	A	98MHz Sensitivity low "Level"	3125	5	Switches just from High to Low
AM - IF						
MW	1494kHz Δf = 10kHz low as posible swept signal		1494kHz	5104	7	symmetrical and max heigh
AM - RF						
LW	155kHz mod = 1kHz 30 % AM 270kHz	B *	155kHz	5109	7	MAX ▲▼
			270kHz	2140		
MW	558kHz mod = 1kHz 30 % AM 1494kHz		558kHz	5107		MAX ▲▼
			1494kHz	2141		

* Signal send via a frame antenna
(..) = tuning grid in kHz

▲▼ repeat

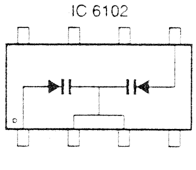
1101	A8	2111	B2	2128	D2	2153	B2	2224	F3	3121	B3	3138	E7	3155	C11	3171	A1	3235	E2	5113	D9
1110	B7	2112	C3	2129	D10	2154	B1	2225	F2	3122	D3	3139	C2	3156	C1	3172	A1	3236	E3	5114	E9
1112	F10	2113	B3	2131	D10	2155	B1	3101	B9	3123	E3	3140	E5	3157	D2	3173	A1	3238	E2	5128	B9
1112	F10	2114	E9	2140	F8	2156	B11	3102	B3	3124	E3	3141	F4	3158	C10	3186	E10	3239	D3	6101	C11
1112	F10	2115	E9	2141	E7	2158	D2	3104	B4	3125	C10	3142	F4	3159	A2	3187	E2	3240	F4	6102	E5
1117	F10	2116	E9	2142	D7	2159	D2	3105	B4	3126	C2	3143	E5	3160	A2	3190	C2	3241	E4	6103	D10
1118	D11	2117	C3	2143	F4	2160	D10	3106	B3	3127	D2	3144	E5	3161	C3	3194	E3	5103	C8	6109	E11
1149	E7	2118	C2	2144	E7	2161	E5	3107	A3	3128	D2	3145	E5	3162	C11	3196	C2	5104	B9	6110	D10
2101	A3	2119	D11	2145	C7	2162	D8	3113	B9	3129	C2	3147	D8	3163	A1	3197	C1	5105	D9	6122	A10
2102	B4	2120	D11	2146	C7	2196	D5	3114	E4	3130	D10	3148	D5	3164	C2	3198	C2	5106	E10	6123	A10
2103	B8	2121	C9	2147	C2	2197	D5	3115	D4	3131	E10	3149	D5	3165	C11	3200	D4	5107	F7	7103	C9
2104	B8	2123	C10	2148	B2	2210	B9	3116	D4	3132	D3	3150	F8	3166	C11	3202	E5	5108	C7	7104	F10
2105	A3	2124	D9	2149	B2	2215	F2	3117	E4	3133	E3	3151	D8	3167	C11	3223	C2	5109	F8	7105	B10
2108	B4	2125	C3	2150	C3	2216	B1	3118	D9	3134	E9	3152	B3	3168	C2	3225	C11	5110	C9	7106	A11
2109	D4	2126	D3	2151	B2	2221	E2	3119	F2	3135	C3	3153	F5	3169	C2	3229	F2	5111	D10	7107	B1
2110	C3	2127	C3	2152	B10	2222	B3	3120	F9	3137	D10	3154	F5	3170	A2	3233	B4	5112	B11	7108	C11

7109	C11	9115	E8
7110	E8	9116	D8
7111	F4	9117	C8
7112	E7	9119	E8
7113	E8	9120	B9
7114	F8	9122	C9
7115	E7	9123	F9
7116	D9	9124	D9
7120	E11	9125	B9
7125	C10	9128	C9
7158	E2	9130	B10
9100	E10	9132	C9
9101	D7	9133	B10
9108	E7	9134	C10
9111	B8	9136	C10
9113	D8	9137	F10

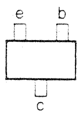


Tuner unit mini 94 copper side view

1
2
3
4
5
6
A
B
C
D
E
F
G
3170
3173
3163
3171
3172
3159
3160
7107
3107
2105
2101
2222
3102
3106
2102
3233
3104
3105
2155
2154
2153
2151
2216
2148
2149
2111
2147
3126
3168
3196
2113
3121
3152
2108
3190
3164
2150
3161
3139
3169
3197
3156
3198
3129
3223
2118
2117
2127
2125
2112
2110
3135
2158
2159
3157
3128
3127
3132
3122
3200
2126
3239
3116
2109
3117
3115
3114
2221
7158
2128
3133
3236
3202
3149
3144
2196
2137
3148
6102
3238
3187
3235
3194
3123
3124
3241
3145
3143
3140
2161
2215
3119
2224
3142
3240
3141
2143
3153
3229
2225
7111
3154
C
7
1
6
2



IC 6102

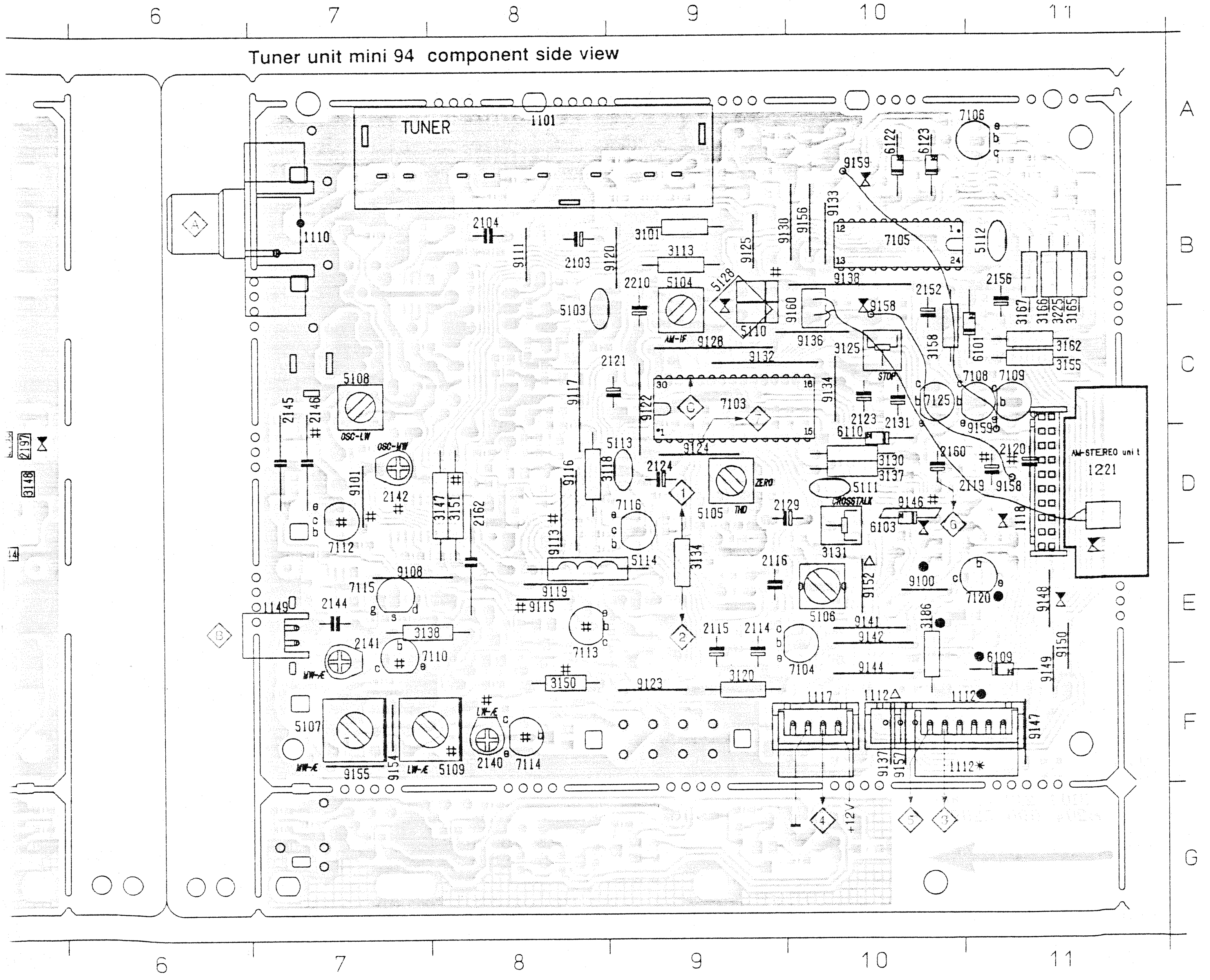


# NOT FOR JAPAN AM-STEREO
⧗ ONLY FOR JAPAN AM-STEREO
△ ONLY FOR UNITS WITH RDS
✳ NOT FOR UNITS WITH MUTE
● ONLY FOR UNITS WITH MUTE

3104-217-037

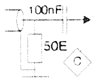
D9	7109	C11	9115	E8	9138	B10
E9	7110	E8	9116	D8	9141	E10
B9	7111	F4	9117	C8	9142	E10
C11	7112	E7	9119	E8	9144	F10
E5	7113	E8	9120	B9	9146	D10
D10	7114	F8	9122	C9	9147	F11
E11	7115	E7	9123	F9	9148	E11
D10	7116	D9	9124	D9	9149	F11
A10	7120	E11	9125	B9	9150	E11
A10	7125	C10	9128	C9	9152	E10
C9	7158	E2	9130	B10	9154	F7
F10	9100	E10	9132	C9	9155	F7
B10	9101	D7	9133	B10	9156	B10
A11	9108	E7	9134	C10	9157	F10
B1	9111	B8	9136	C10		
C11	9113	D8	9137	F10		

Tuner unit mini 94 component side view


6
7
8
9
10
11
A
B
C
D
E
F
G
TUNER
1101
1110
2104
2103
9111
9120
3101
3113
2210
5104
AM-IF
5103
5128
5110
9128
9125
9130
9156
9133
7105
12
13
1
24
9138
5112
9159
6122
6123
7106
e
b
c
2152
2156
3167
3166
3225
3165
9160
9136
9158
3125
STOP
3158
6101
3162
3155
3132
2121
9117
9122
7103
30
16
15
9134
C
7
2123
2131
7125
7108
7109
6110
9159
AM-STEREO unit
1221
5108
OSC-LW
2145
2146
OSC-MW
2142
9101
3147
3151
2162
9116
5113
3118
9124
2124
1
5105
THD
ZERO
3130
3137
5111
CROSSTALK
2129
2160
2120
2119
9158
9146
6103
G
1118
7112
7116
9113
5114
3134
3131
2116
9152
9100
7120
9148
9108
7115
9119
9115
5106
1149
2144
2141
3138
7110
MW-Æ
7113
2
2115
2114
7104
9141
9142
3186
6109
9150
9149
3150
9123
3120
9144
1117
1112
9147
5107
MW-Æ
9155
9154
LW-Æ
5109
LW-Æ
2140
7114
9137
9152
1112*
4
+12V
5
3
A
B

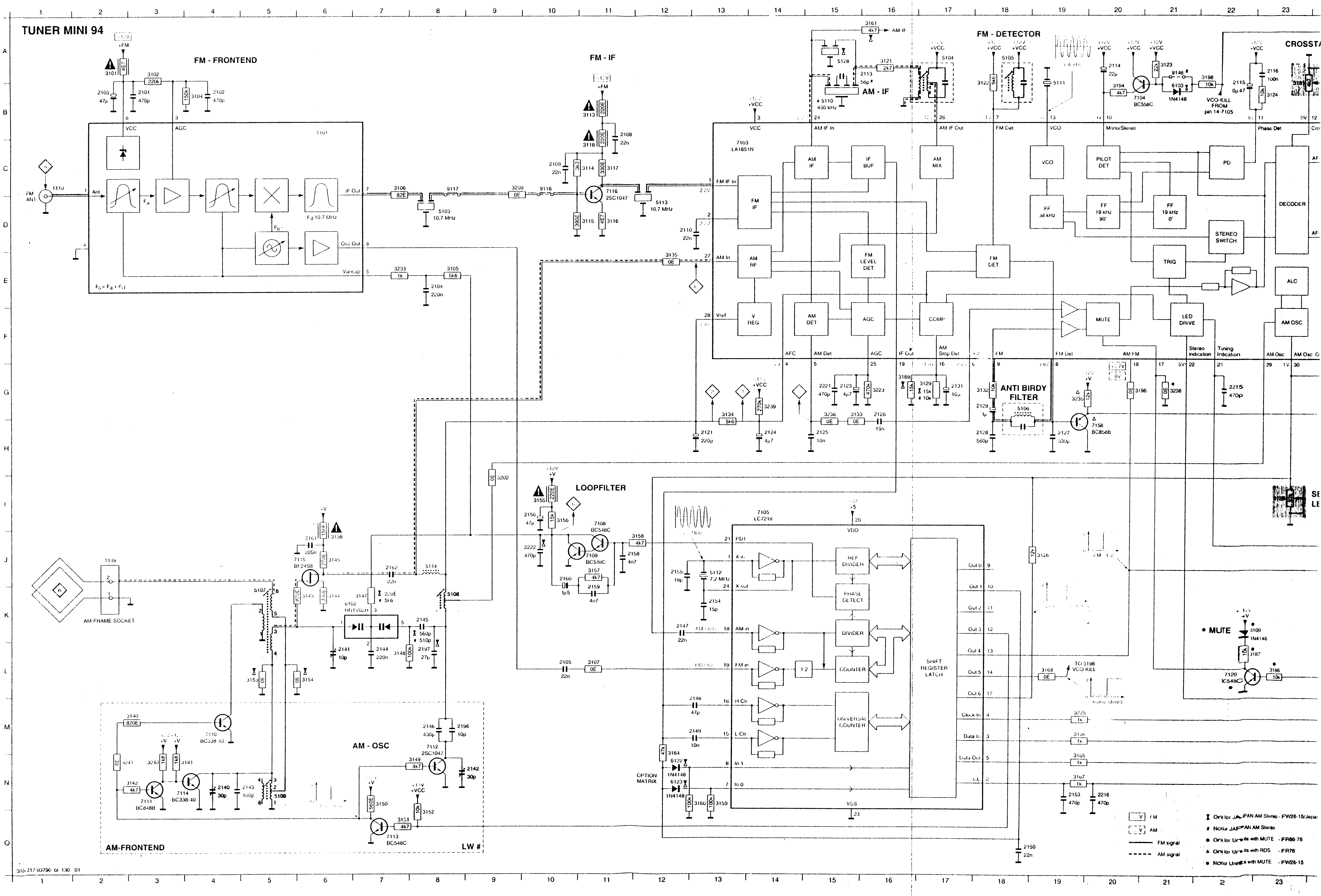
4-217-03790 .6

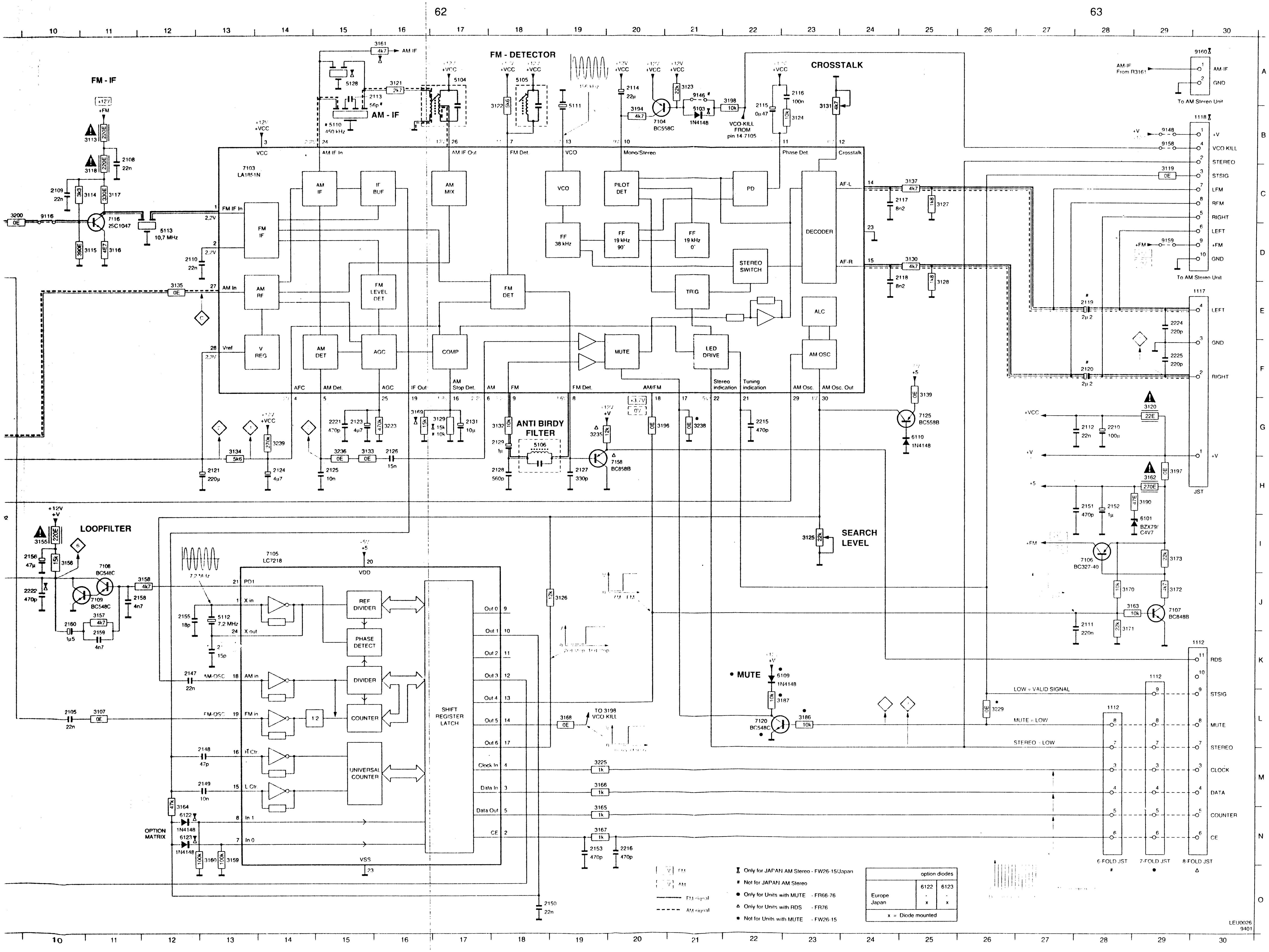
TUNER MINI 94 Adjustment table Japan version (FM, AM-stereo, Frame antenna)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM 76 - 90MHz (100)			90 MHz	check	6	7.....9V
			76 MHz	check		1.3.....2V
MW 522 - 1629kHz (9)			1611kHz	5108		7,4V ± 0.1V
			522kHz	check		0.7.....1.7V
FM IF						
FM	85 MHz 1mV mod = 1kHz Δf = 75kHz	A	85MHz	5105	1 2	0V ± 20mV
STEREO CROSSTALK						
FM	85 MHz 1mV 90% L + 9% pilot	A	85MHz	check	3	low < 1V
				3131	4	Right channel min.
SEARCH SENSITIVITY						
FM	85 MHz 12µV mod = 1kHz Δf = 75kHz	A	85MHz Sensitivity low "Level"	3125	5	Switches just from High to Low
AM - IF						
MW	1600kHz Δf = 10kHz low as posible swept signal		1600kHz	5104	7	symmetrical and max height
AM - RF						
MW	560kHz mod = 1kHz 30% AM	B *	560kHz	5107	7	▲ MAX
	1600kHz		1600kHz	2141		▼
AM - STEREO CROSSTALK						
MW	1494kHz 50mV 25% L + 5% pilot mod = 1kHz	B *		5240	4	Optimal crosstalk

* Signal send via a frame antenna
(..) = Tuning grid in kHz

▲
repeat
▼


TUNER MINI 94
FM - FRONTEND
FM - IF
AM - IF
FM - DETECTOR
CROSST
ANTI BIRDY FILTER
LOOPFILTER
AM - OSC
AM-FRONTEND
LW #
AM-FRAME-SOCKET
FM ANT
1110
1101
1149
VCC
AGC
Ant
IF Out
Osc Out
Vancap
Fa
Fd 10.7 MHz
Fo
Fo = Fa + Fd
7103
LA1851N
7105
LC7218
7116
2SC1047
7115
BF245B
7108
BC548C
7109
BC548C
7110
BC338-40
7111
BC548B
7112
2SC1047
7113
BC548C
7114
BC338-40
7104
BC558C
7158
BC858B
7120
BC548C
6102
HN1V02H
5103
10.7 MHz
5113
10.7 MHz
5110
450 kHz
5112
7.2 MHz
FM IF In
AM In
Vref
AM IF In
AM IF Out
FM Det
VCO
Mono/Stereo
Phase Det.
AFC
AM Det
AGC
IF Out
AM Stop Det
FM
FM Det
AM/FM
Stereo indication
Tuning indication
AM Osc
AM IF
IF BUF
AM MIX
FM IF
AM RF
FM LEVEL DET
V REG
AM DET
COMP
FM DET
PILOT DET
PD
DECODER
FF 38 kHz
FF 19 kHz 90°
FF 19 kHz 0°
STEREO SWITCH
TRIG
MUTE
LED DRIVE
ALC
AM OSC
VDD
VSS
PD1
X in
X out
AM in
FM in
H Ctr
L Ctr
In 1
In 0
REF DIVIDER
PHASE DETECT
DIVIDER
COUNTER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
1:2
Out 0
Out 1
Out 2
Out 3
Out 4
Out 5
Out 6
Clock In
Data In
Data Out
CE
OPTION MATRIX
VCO-KILL FROM pin 14-7105
TO 3198 VCO KILL
• MUTE
6109
1N4148
6103
1N4148
6122
1N4148
6123
1N4148
FM
AM
FM signal
AM signal
Only for JAPAN AM Stereo - FW26-15/Japan
# Not for JAPAN AM Stereo
● Only for Units with MUTE - FR66-76
▲ Only for Units with RDS - FR76
● Not for Units with MUTE - FW26-15
310-217 03790 bl 130 01


62
63
FM - IF
FM - DETECTOR
AM - IF
CROSSTALK
ANTI BIRDY FILTER
SEARCH LEVEL
LOOPFILTER
MUTE
OPTION MATRIX
7103
LA1851N
7105
LC7218
FM IF
AM RF
V REG
AM IF
IF BUF
AM DET
AGC
FM LEVEL DET
AM MIX
COMP
FM DET
VCO
FF 38 kHz
PILOT DET
FF 19 kHz 90°
FF 19 kHz 0°
PD
STEREO SWITCH
TRIG
MUTE
LED DRIVE
DECODER
ALC
AM OSC
REF DIVIDER
PHASE DETECT
DIVIDER
COUNTER
UNIVERSAL COUNTER
SHIFT REGISTER LATCH
5113 10,7 MHz
5110 450 kHz
5112 7.2 MHz
VCO-KILL FROM pin 14 7105
To AM Stereo Unit
AM-IF From R3161
JST
6-FOLD JST
7-FOLD JST
8-FOLD JST
LOW = VALID SIGNAL
MUTE = LOW
STEREO = LOW
RDS
STSIG
MUTE
STEREO
CLOCK
DATA
COUNTER
CE
LEFT
GND
RIGHT
+V
VCO KILL
LFM
RFM
+FM
LEU0026
9401

FM

AM

FM signal

AM signal

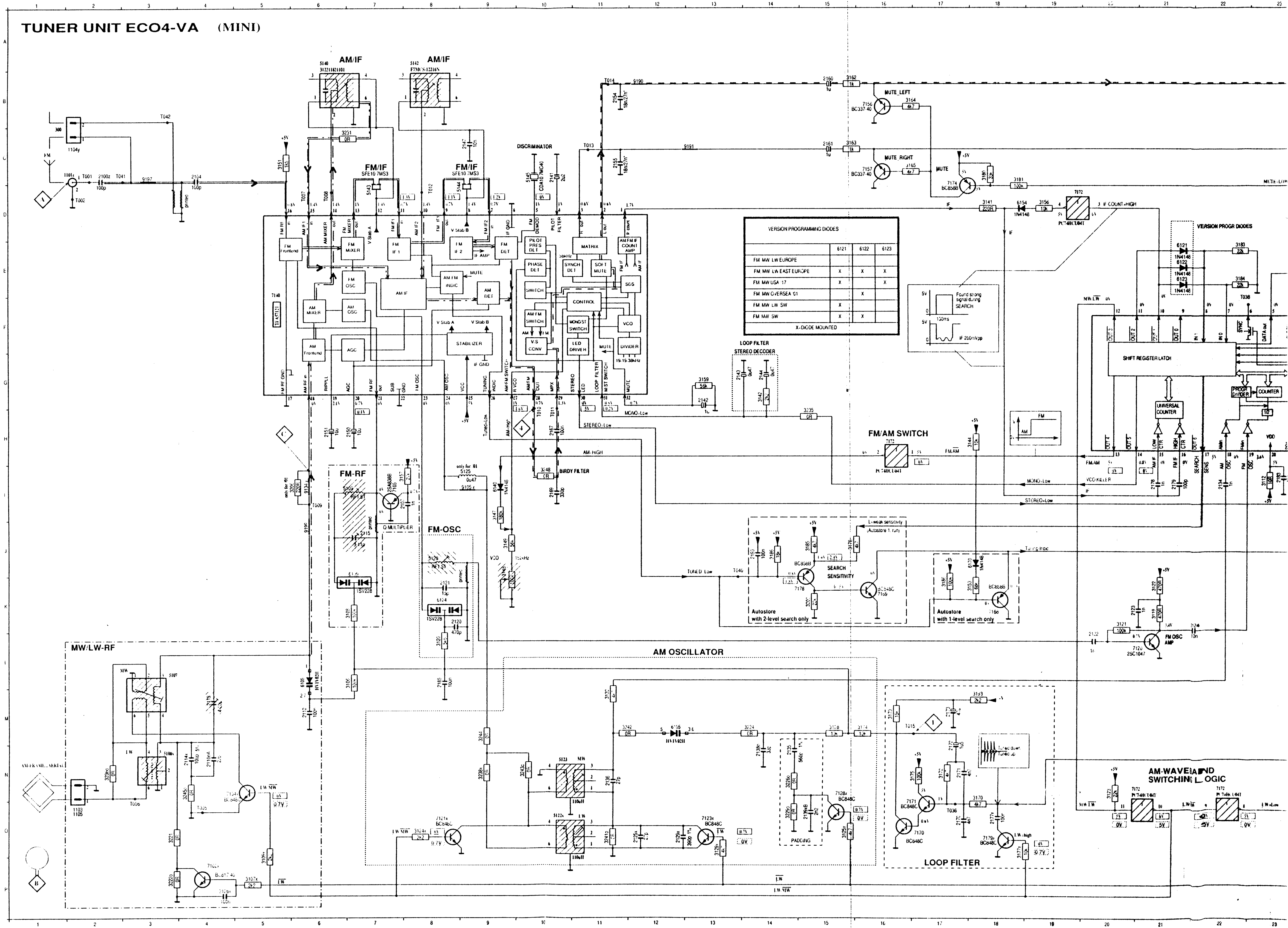
- ⧗ Only for JAPAN AM Stereo - FW26-15/Japan
- # Not for JAPAN AM Stereo
- ● Only for Units with MUTE - FR66-76
- ∆ Only for Units with RDS - FR76
- ✱ Not for Units with MUTE - FW26-15

option diodes	6122	6123
Europe	-	-
Japan	x	x

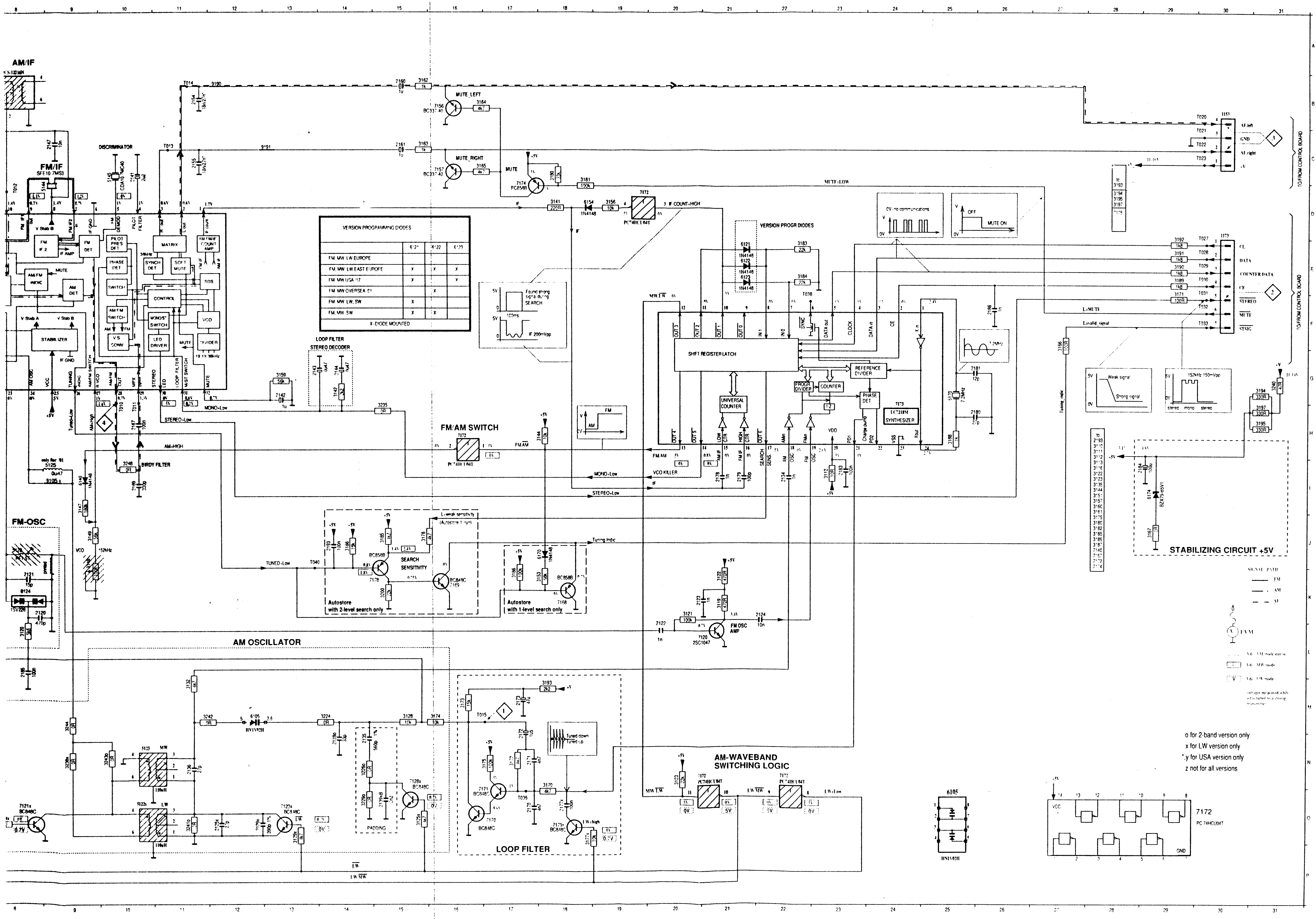
x = Diode mounted

1101	B6	3165	N19
1110	C1	3166	M19
1112	L28	3167	N19
1112	K29	3168	L19
1112	K30	3169	G16
1117	E30	3170	J28
1118	B30	3171	K28
1149	J2	3172	J29
1221	A30	3173	I29
2101	B3	3186	L23
2102	B4	3187	L22
2103	B2	3190	H29
2104	E8	3194	B20
2105	L10	3196	G20
2108	B11	3197	H29
2109	C10	3198	A22
2110	D12	3200	C9
2111	J28	3202	I9
2112	G28	3223	G16
2113	A15	3225	M19
2114	A20	3229	L26
2115	B22	3233	E7
2116	A23	3235	G19
2117	C24	3236	G15
2118	D24	3238	G21
2119	E28	3239	G14
2120	F28	3240	N3
2121	H13	3241	N2
2123	G15	5103	D8
2124	H14	5104	A17
2125	H15	5105	A18
2126	G16	5106	G18
2127	H19	5107	K5
2128	H18	5108	K8
2129	G18	5109	N5
2131	G17	5110	B15
2140	N4	5111	B19
2141	L6	5112	J13
2142	N9	5113	D12
2143	N5	5114	J8
2144	L7	5128	A15
2145	K8	6101	I29
2146	M8	6102	K6
2147	K12	6103	B21
2148	M12	6109	K22
2149	M12	6110	G25
2150	O18	6122	N12
2151	H28	6123	N12
2152	H28	7103	C13
2153	N19	7104	B20
2154	K13	7105	I14
2155	J12	7106	I28
2156	I10	7107	J29
2158	J11	7108	I11
2159	K11	7109	J11
2160	J10	7110	M4
2161	J6	7111	N3
2162	J7	7112	M8
2196	M8	7113	O7
2197	L8	7114	N3
2210	G28	7115	J5
2215	G22	7116	C11
2216	N20	7120	L22
2221	G15	7125	G25
2222	J10	7158	H20
2224	E29	9116	C10
2225	F29	9117	C8
3101	A2	9146	A21
3102	A3	9148	B29
3104	B4	9158	B29
3105	E8	9159	D29
3106	C7	9160	A30
3107	L11		
3113	B11		
3114	C11		
3115	D11		
3116	D11		
3117	C11		
3118	C11		
3119	C29		
3120	G29		
3121	A16		
3122	B18		
3123	A21		
3124	B23		
3125	I23		
3126	J19		
3127	C25		
3128	E25		
3129	G17		
3130	D25		
3131	B23		
3132	G18		
3133	G15		
3134	G13		
3135	E12		
3137	C25		
3138	J6		
3139	G25		
3140	M2		
3141	N3		
3142	N2		
3143	K6		
3144	K6		
3145	J6		
3147	K7		
3148	L7		
3149	N7		
3150	N7		
3151	O7		
3152	O8		
3153	L5		
3154	L6		
3155	I10		
3156	I10		
3157	J11		
3158	J11		
3159	N13		
3160	N13		
3161	A16		
3162	H29		
3163	J28		
3164	N12		

TUNER UNIT ECO4-VA (MINI)


AM/IF
AM/IF
FM/IF
SFE10.7MS3
FM/IF
SFE10.7MS3
DISCRIMINATOR
CDA10.7MC40
FM Frontend
FM MIXER
FM OSC
AM IF
FM IF 1
FM IF 2
IF AMP
FM DET
AM FM INDIC
AM DET
MUTE
AM MIXER
AM OSC
AM Frontend
AGC
STABILIZER
V Stab A
V Stab B
PILOT PRES DET
PHASE DET
SWITCH
AM FM SWITCH
V.S CONV
MATRIX
SYNCH DET
SOFT MUTE
SDS
CONTROL
MONO ST SWITCH
LED DRIVER
VCO
DIVIDER
19.19-38kHz
7140
TEA5712
LOOP FILTER
STEREO DECODER
MUTE_LEFT
MUTE_RIGHT
BC337-40
MUTE
BC858B
IF COUNT=HIGH
PCF74HC U04T
VERSION PROGR DIODES
1N4148
Found strong signal during SEARCH
100ms
IF 200mVpp
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
PROGR DIVIDER
COUNTER
FM/AM SWITCH
MONO=Low
STEREO=Low
AM=HIGH
VCO-KILLER
BIRDY FILTER
FM-RF
Q-MULTIPLIER
2SA838B
1SV228
FM-OSC
TUNED=Low
SEARCH SENSITIVITY
Autostore with 2-level search only
Autostore with 1-level search only
BC858B
BC848C
Tuning Indic
FM OSC AMP
2SC1047
AM OSCILLATOR
BB112
PADDING
LOOP FILTER
AM-WAVEBAND SWITCHING LOGIC
MW/LW-RF
AM-FRAME_AERIAL
BC848C
BU517-40
LW MW
LW
MW
MUTE=LOW

VERSION PROGRAMMING DIODES	6121	6122	6123
FM MW LW EUROPE			
FM, MW LW EAST EUROPE	X	X	X
FM MW USA '17	X		X
FM, MW OVERSEA '01		X	
FM, MW LW SW	X		
FM MW SW	X	X	
X=DIODE MOUNTED			


AM/IF
FM/IF
SFE10.7MS3
DISCRIMINATOR
FM-OSC
AM OSCILLATOR
FM/AM SWITCH
PC74HCU04T
BIRDY FILTER
LOOP FILTER
STEREO DECODER
VERSION PROGR DIODES
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
PROGR DIVIDER
COUNTER
REFERENCE DIVIDER
PHASE DET
LC7218M SYNTHESIZER
MUTE_LEFT
MUTE_RIGHT
MUTE
MUTE=LOW
IF COUNT=HIGH
MONO=Low
STEREO=Low
AM=HIGH
TUNED=Low
VCO KILLER
Tuning Indic
SEARCH SENSITIVITY
Autostore with 2-level search only
Autostore with 1-level search only
L=weak sensitivity (Autostore 1 run)
FM OSC AMP
2SC1047
AM-WAVEBAND SWITCHING LOGIC
MW/LW
LW/MW
LW=Low
LW=high
PADDING
Tuned down
Tuned up
STABILIZING CIRCUIT +5V
BZX79-B5V1
TO/FROM CONTROL BOARD
AF-left
GND
AF-right
CL
DATA
COUNTER DATA
CE
STEREO
MUTE
STSIG
L=MUTE
L=valid_signal
Found strong signal during SEARCH
IF 200mVpp
CV-no communications
OFF
MUTE ON
Weak signal
Strong signal
152kHz 150mVpp
stereo
mono
stereo
7.2MHz
6105
HVU202
7172
PC74HCU04T
VCC
GND
SIGNAL PATH
FM
AM
AF
EVM

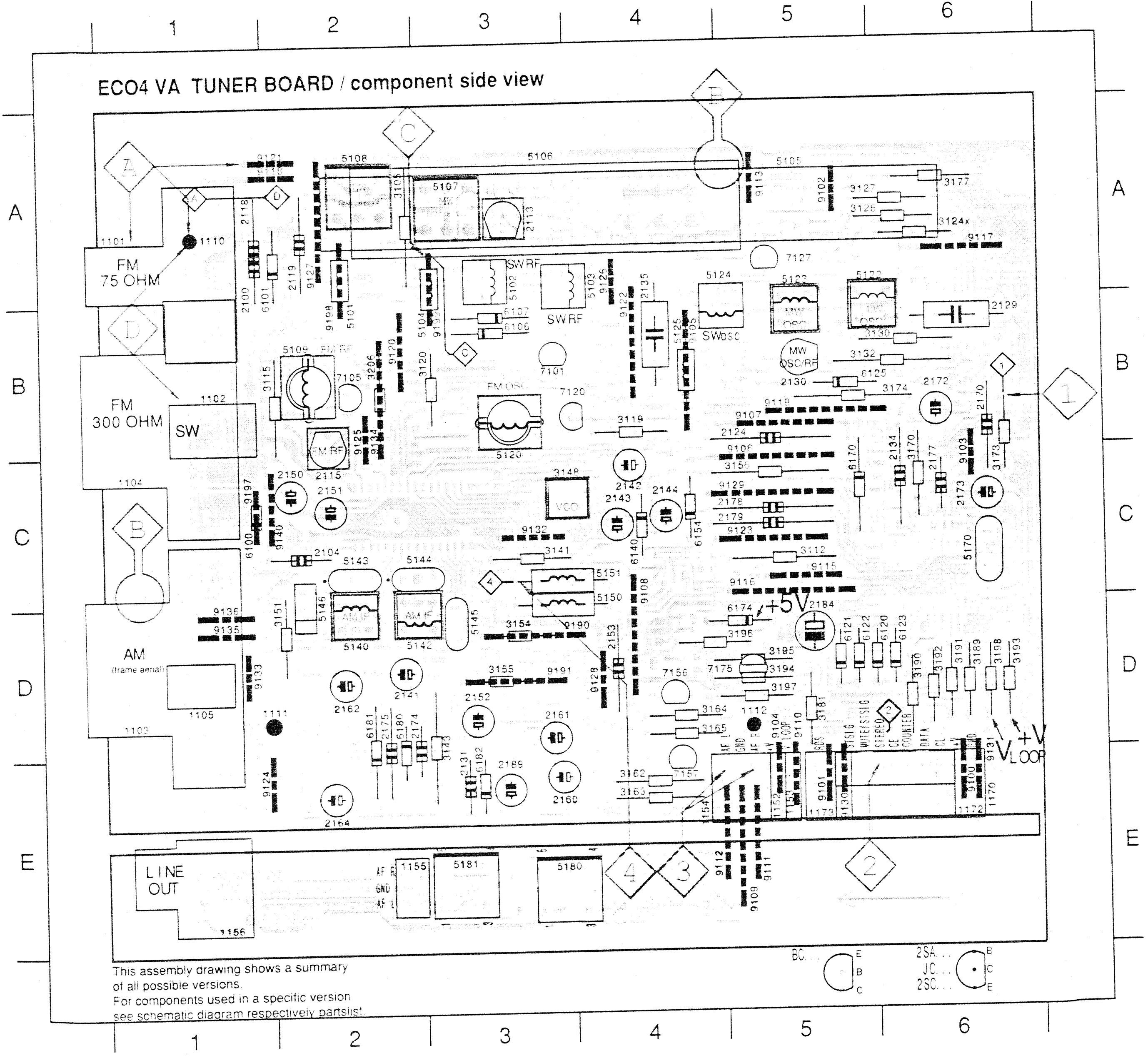
VERSION PROGRAMMING DIODES	6121	6122	6123
FM, MW, LW EUROPE			
FM, MW, LW EAST EUROPE	X	X	X
FM, MW USA /17	X		X
FM, MW OVERSEA /01		X	
FM, MW, LW, SW	X		
FM, MW, SW	X	X	
X-DIODE MOUNTED			

o for 2-band version only
x for LW version only
*y for USA version only
z not for all versions

1101z	C 1
1103	O 2
1104y	C 2
1105	N 2
1153	B30
1173	D30
2100z	C 2
2104	C 4
2107	I 8
2110o	N 4
2112	N 6
2113	M 4
2114x	N 4
2115	J 7
2120	K 8
2121	K 8
2122	K20
2123	K20
2124	K22
2125x	O12
2126x	P 4
2129x	O12
2134	I22
2135	N14
2136	N11
2138o	N14
2139x	C15
2141	C10
2142	G13
2143	G13
2144	G14
2147	C 9
2150	H 7
2151	H 6
2154	C11
2155	C12
2160	B15
2161	C15
2167	H10
2169	I10
2170	O17
2171	N17
2172	M17
2173	M17
2177x	O18
2178	I21
2179	I21
2180	H25
2181	G25
2183	I23
2184	I29
2185	L 8
2186	F25
2193	J14
3106	L 7
3107x	P 5
3108	K 7
3109x	O 5
3112	I23
3119	K21
3120	L 8
3121	K20
3122	K21
3123	N20
3124x	O 8
3125x	O15
3128	M15
3129x	O13
3132	M12
3141	D18
3142	G14
3144	H18
3147	I 9
3148	J 9
3149	J 9
3151	C 4
3153	K18
3156	D19
3157	I 7
3159	G13
3162	B15
3163	C15
3164	B16
3165	C16
3166	F27
3167	J29
3170	N18
3171	F29
3172	N17
3173	M16
3174	M16
3175	N17
3177x	O18
3178	J15
3180	C18
3181	C18
3183	E22
3184	E22
3185	J15
3186	J14
3186	K17
3188	H25
3189	E29
3190	E29
3191	E29
3192	E29
3193	M18
3194	G31
3195	H31
3197	H31
3200	K15
3206	I 6
3221	O 3
3222o	P 3
3224	M14
3226o	N14
3229o	O14
3231	C 7
3235	H15
3236o	N 2
3238x	N 9
3240	G31
3241o	O11
3242	N11
3243o	N10
3244	M 9
3245o	N 4
3248	I10
5107	M 2
5108x	N 3
5109	I 7
5120	J 8
5122x	O10
5123	N10
5125	I 9
5140	A 6
5142	A 8
5143	D 7
5144	D 9
5145	C10
5170	G25
6105	M12
6105	N6
6109	J 7
6121	E21
6122	E21
6123	E21
6124	K 8
6140	I 9
6154	D18
6170	K18
6174	I29
7102x	P 4
7104x	N 5
7105	I 7
7120	L20
7121x	O 8
7123x	O13
7128x	N15
7140	E 5
7156	B16
7157	C16
7168	L18
7169	K17
7170	O17
7171	O17
7172	H16
7172	D20
7172	O20
7172	N22
7172	N20
7172	O22
7173	H24
7174	D17
7178	K14
7179x	O18
9105	I 9
9134	I 6
9190	B12
9191	C13
9197	C 3
9199	J 6
T001	C 2
T002	D 2
T005	O 4
T006	O 3
T007	D 6
T008	D 6
T009	I 6
T010	H10
T011	H10
T012	C 8
T013	C11
T014	B11
T015	M16
T020	B29
T021	C29
T022	C29
T023	C29
T027	D30
T028	E30
T029	E30
T030	E30
T031	E30
T032	F30
T033	F30
T036	O17
T038	B22
T040	J13
T041	C 2

1101	A 1	1173	E 5	2142	C 4	2175	D 2	3127	A 6	3173	B 6	5101	A 2	5142	D 2	6121	D 5	7156	D 4	9112	E 4	9128	D 4
1102	B 1	2100	A 1	2143	C 4	2177	C 6	3130	B 6	3174	B 5	5102	A 3	5143	C 2	6122	D 5	7157	E 4	9113	A 5	9129	C 5
1103	D 1	2104	C 2	2144	C 4	2178	C 5	3132	B 6	3177	A 6	5103	A 3	5144	C 2	6123	D 6	7175	D 5	9115	C 5	9130	E 5
1104	B 1	2106	B 4	2150	C 2	2179	C 5	3141	C 3	3181	D 5	5104	A 3	5145	D 3	6125	B 5	9100	E 6	9116	C 5	9131	E 6
1105	D 1	2113	A 3	2151	C 2	2184	D 5	3143	D 3	3189	D 6	5105	A 4	5146	D 2	6140	C 4	9101	E 5	9117	A 6	9132	C 3
1110	A 1	2115	B 2	2152	D 3	2189	E 3	3148	C 3	3190	D 6	5106	A 4	5150	D 3	6154	C 4	9102	A 5	9118	A 2	9133	D 1
1111	D 2	2118	A 1	2153	D 4	2190	A 2	3151	D 2	3191	D 6	5107	A 3	5151	C 3	6170	C 5	9103	C 6	9119	B 5	9134	B 2
1112	D 5	2119	A 2	2160	E 3	2191	A 6	3154	D 3	3192	D 6	5108	A 2	5170	C 6	6174	D 5	9104	E 5	9120	B 2	9135	D 1
1152	E 5	2124	B 5	2161	D 3	3105	A 2	3155	D 3	3193	D 6	5109	B 2	5180	E 3	6180	D 2	9105	B 4	9121	A 2	9136	D 1
1153	E 5	2129	B 6	2162	D 2	3112	C 5	3156	C 5	3194	D 5	5120	B 3	5181	E 3	6181	D 2	9106	C 5	9122	B 4	9140	C 2
1154	E 4	2130	B 5	2164	E 2	3115	B 2	3162	E 4	3195	D 5	5122	B 6	6100	C 1	6182	E 3	9107	B 5	9123	C 5	9190	D 3
1155	E 2	2131	E 3	2170	B 6	3119	B 4	3163	E 4	3196	D 4	5123	B 5	6101	A 2	7101	B 3	9108	D 4	9124	E 1	9191	D 3
1156	E 1	2134	C 6	2172	B 6	3120	B 3	3164	D 4	3197	D 5	5124	B 5	6106	B 3	7105	B 2	9109	E 5	9125	B 2	9197	C 1
1170	E 6	2135	B 4	2173	C 6	3124	A 6	3165	D 4	3198	D 6	5125	B 4	6107	B 3	7120	B 4	9110	E 5	9126	A 4	9198	A 2
1172	E 6	2141	D 2	2174	D 2	3126	A 6	3170	C 6	3206	B 2	5140	D 2	6120	D 6	7127	A 5	9111	E 5	9127	A 2	9199	A 3

o for AM-version only
x for LW-version only
y for USA version only
z not for all versions

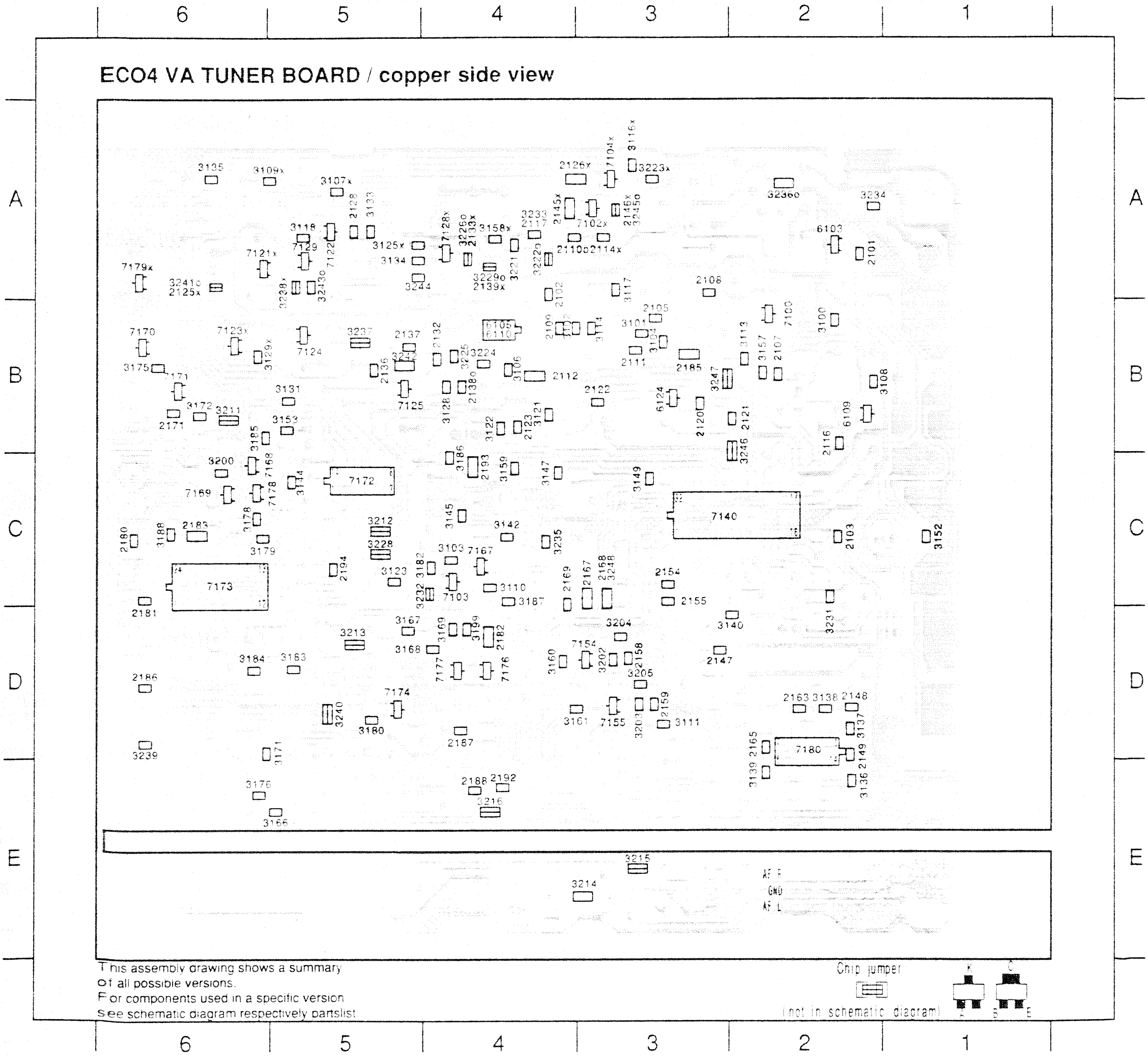

ECO4 VA TUNER BOARD / component side view

This assembly drawing shows a summary of all possible versions.
For components used in a specific version see schematic diagram respectively partslist.

1
2
3
4
5
6
A
B
C
D
E
FM 75 OHM
FM 300 OHM
SW
AM (frame aerial)
LINE OUT
SWRF
SWOSC
MW OSC
LW OSC
MW OSC/RF
FM RF
FM OSC
VCO
AM IF
+5V
V LOOP
+V
GND
AF R
AF L
STEREO
MUTE/STSIG
CE
COUNTER
DATA
CL
RDS
1101
1102
1103
1104
1105
1110
1111
1112
1152
1155
1156
1170
1172
1173
5101
5102
5103
5104
5105
5106
5107
5108
5109
5120
5122
5123
5124
5125
5140
5142
5143
5144
5145
5146
5150
5151
5170
5180
5181
7101
7105
7120
7127
7156
7157
7175
3177
3127
3126
3124x
2129
2130
3132
3174
2172
2170
3173
9103
9117
9102
9113
9121
9118
2118
2100
6101
2119
9127
9198
9126
9122
2135
6106
6107
3115
3206
9125
9134
9120
3120
2150
2115
2151
9197
9140
6100
2104
9136
9135
9133
3151
2162
2141
2164
9124
6181
2175
6180
2174
3143
2131
6182
2189
2152
2161
2160
3155
9191
3154
9190
2153
9128
3141
9132
3148
2142
2143
2144
6140
6154
9108
3119
9107
2124
9106
3156
9129
2178
2179
9123
3112
9115
9116
6174
2184
3196
3195
3194
3197
3164
3165
3162
3163
6170
2134
3170
2177
2173
6121
6122
6120
6123
3190
3192
3191
3189
3198
3193
3181
9104
9110
9101
9131
9100
9119
9130
9112
9109
9111
BC...
2SA...
JC...
2SC...
E
B
C

2101 A 2	2122 B 3	2149 D 2	2185 B 3	3109x A 5	3133 A 5	3157 B 2	3180 D 5	3212 C 5	3233 A 4	3248 C 3	7128x A 4	7178 C 6
2102 A 4	2123 B 4	2154 C 3	2186 D 6	3110 C 4	3134 A 5	3158x A 4	3182 C 4	3213 D 5	3234 A 2	6103 A 2	7129 A 5	7179x A 6
2103 C 2	2125x A 6	2155 C 3	2187 D 4	3111 D 3	3135 A 6	3159 C 4	3183 D 5	3214 E 3	3235 C 4	6105 B 4	7140 C 2	7180 D 2
2105 B 3	2126x A 3	2158 D 3	2188 E 4	3113 B 2	3136 E 2	3160 D 4	3184 D 6	3215 E 3	3236o A 2	6109 B 2	7154 D 3	
2107 B 2	2128 A 5	2159 D 3	2192 E 4	3114 B 3	3137 D 2	3161 D 3	3185 B 6	3216 E 4	3237 B 5	6110 B 4	7155 D 3	
2108 A 3	2132 B 4	2163 D 2	2193 C 4	3116x A 3	3138 D 2	3166 E 5	3186 C 4	3221 A 4	3238x A 5	6124 B 3	7167 C 4	
2109 B 4	2133x A 4	2165 E 2	2194 C 5	3117 A 3	3139 D 2	3167 D 5	3187 C 4	3222o A 4	3239 D 6	7100 B 2	7168 C 6	
2110o A 4	2136 B 5	2167 C 3	3100 B 2	3118 A 5	3140 D 2	3168 D 4	3188 C 6	3223x A 3	3240 D 5	7102x A 3	7169 C 6	
2111 B 3	2137 B 5	2168 C 3	3101 B 3	3121 B 4	3142 C 4	3169 D 4	3199 D 4	3224 B 4	3241o A 6	7103 C 4	7170 B 6	
2112 B 4	2138o B 4	2169 C 4	3102 B 3	3122 B 4	3144 C 5	3171 D 6	3200 C 6	3225 B 4	3242 B 5	7104x A 3	7171 B 6	
2114x A 3	2139x A 4	2171 B 6	3103 C 4	3123 C 5	3145 C 4	3172 B 6	3202 D 3	3226o A 4	3243o A 5	7121x A 6	7172 C 5	
2116 B 2	2145x A 4	2180 C 6	3104 B 3	3125x A 5	3147 C 4	3175 B 6	3203 D 3	3228 C 5	3244 A 5	7122 A 5	7173 C 6	
2117 A 4	2146x A 3	2181 C 6	3106 B 4	3128 B 4	3149 C 3	3176 E 6	3204 D 3	3229o A 4	3245o A 3	7123x B 6	7174 D 5	
2120 B 3	2147 D 3	2182 D 4	3107x A 5	3129x B 6	3152 C 1	3178 C 6	3205 D 3	3231 C 2	3246 B 2	7124 B 5	7176 D 4	
2121 B 2	2148 D 2	2183 C 6	3108 B 2	3131 B 5	3153 B 5	3179 C 6	3211 B 6	3232 C 4	3247 B 3	7125 B 5	7177 D 4	

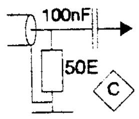
o for AM-version only
x for LW-version only
y for USA version only
z not for all versions



ECO4 VA TUNER BOARD / copper side view

This assembly drawing shows a summary
of all possible versions.
For components used in a specific version
see schematic diagram respectively partslist

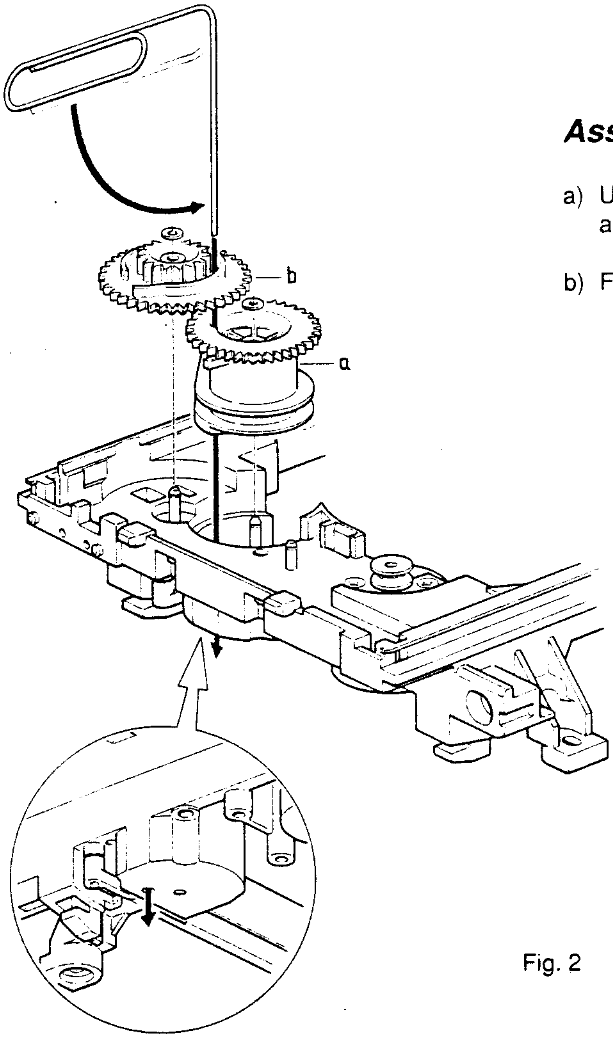
TUNER Adjustment table (ECO4 VA FM/MW- and FM/MW/LW - versions with AM-frame aerial)

Waverange	Input frequency	Input	Set tuned to	Adjust	Output	Scope / Voltmeter
VARICAP ALIGNMENT						
FM /00/01/05/10/17 87.5 - 108MHz			108 MHz	5120	1	8 ± 0.2V
			87.5MHz	check		4.1 ± 0.5V
FM /14 East Europe 65.81 - 108MHz			108 MHz	5120		8V ± 0.2V
			65.81 MHz	check		0.8 ± 0.4V
MW /01/17 2-band version 530 - 1710kHz			1710kHz	5123		9V ± 0.1V
			530kHz	check		1V ± 0.4V
LW /00/05/10/14 153 - 279kHz			279kHz	5122		8V ± 0.2V
			153kHz	check		1V ± 0.4V
MW /00/05/10/14 522 - 1611kHz			1611kHz	5123		8V ± 0.1V
			522kHz	check		1V ± 0.4V
FM - RF						
FM /00/01/05/10/17	108MHz	A mod=1kHz Δf=22.5kHz	108MHz	2115	3	MAX ↕
	87.5MHz		87.5MHz	5109		
FM /14 East Europe	108MHz		108MHz	2115		
	65.81MHz		65.81MHz	5109		
VCO						
FM	98 MHz, 1mV continuous wave	A	98MHz	3148	2	152 ±1 kHz
AM - IF						
MW	540kHz Δf = 10kHz as low as possible		540kHz	5142 5140	4	symmetrical and max height
AM - RF [1]						
LW	198kHz	B mod=1kHz 30% AM	198kHz	5108	4	MAX
MW 3-band version	1494kHz		1494kHz	2113		MAX ↕
	549kHz		549kHz	5107		
MW 2-band version	1500kHz		1500kHz	2113		
	550kHz		550kHz	5107		

* Use Service Test Program. By selecting the TUNER TEST test frequencies will be stored as preset frequ. automatically.

[1] For AM RF-adjustments the original frame antenna 4822 158 60622 has to be used!

↕ repeat



Assembly of gear

a) Use a pin (e.g. a paperclip) to align the cam wheel (a) and the gear wheel (b) together. See Fig. 2.

b) Fix the wheels with the small plastic whashers.

Fig. 2

Dismantling hints CD Short Loader

Dismantling the tray

a) Press open/close button to open the tray. If the tray doesn't work, use a small screw driver as shown in Fig.1 point 1 to move the tray outside. After the first centimeter it is possible to pull the tray out by hand.

b) Release two snaps and remove tray.

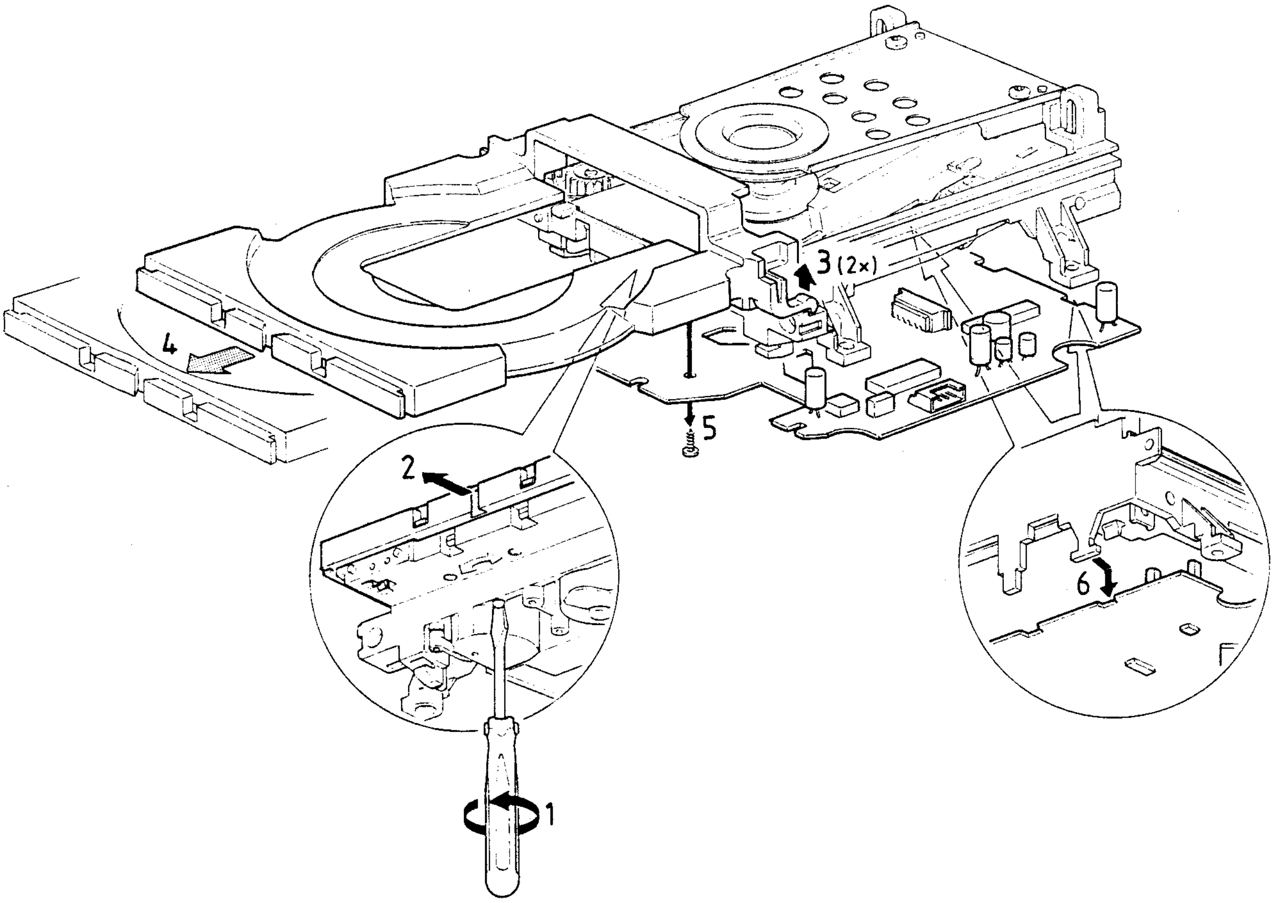


Fig. 1

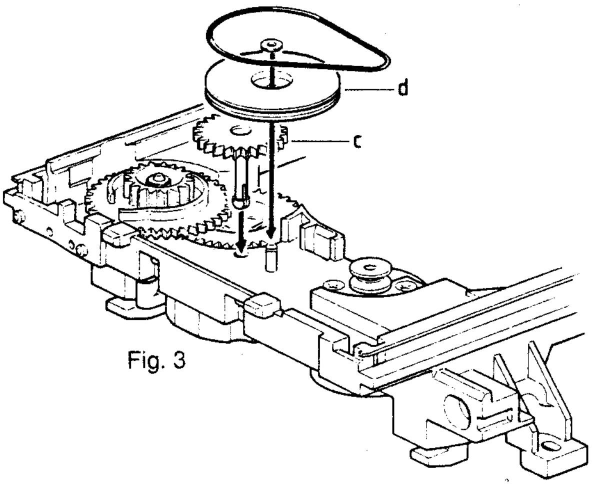


Fig. 3

c) Mount idle wheel2 (c) and idle wheel1 (d) in any position. See Fig. 3.

d) Fix the idle wheel1 with the small plastic whasher.

e) Mount the driving belt.

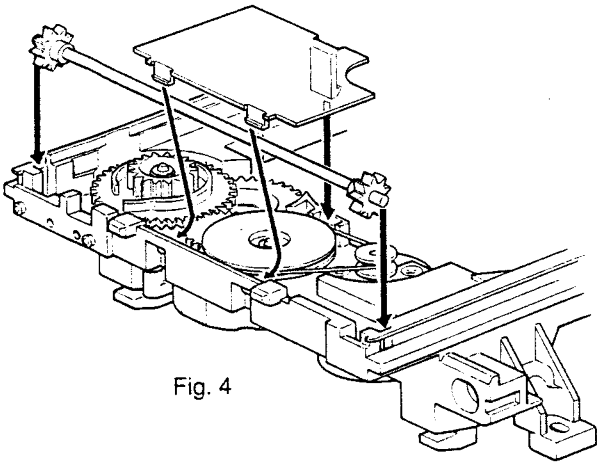


Fig. 4

f) Mount the pinion guiding assy and the cover as shown in Fig. 4.

g) Turn the gear wheel (b) counter clockwise to endposition.

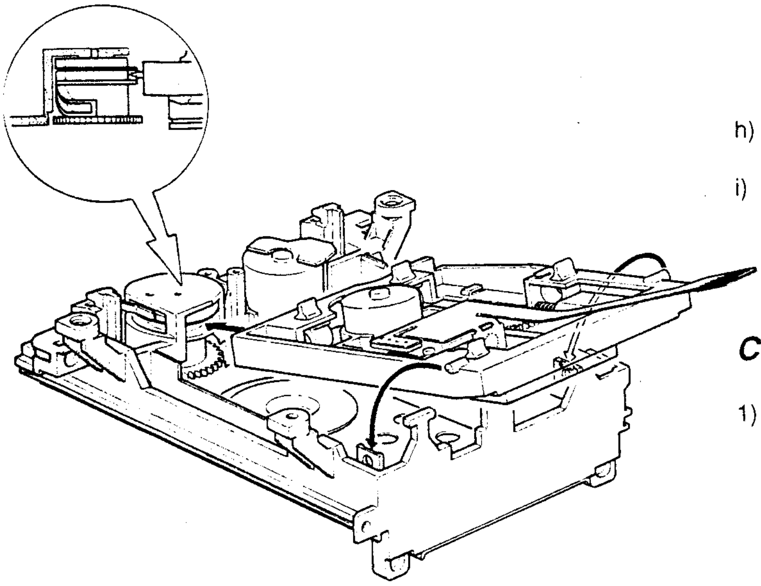


Fig. 5

h) Mount the CD Mechanismn as shown in Fig. 5.

i) Mount the tray. (Align the tray to the chassis and push it inside)

Check if tray mechanismn works correct!

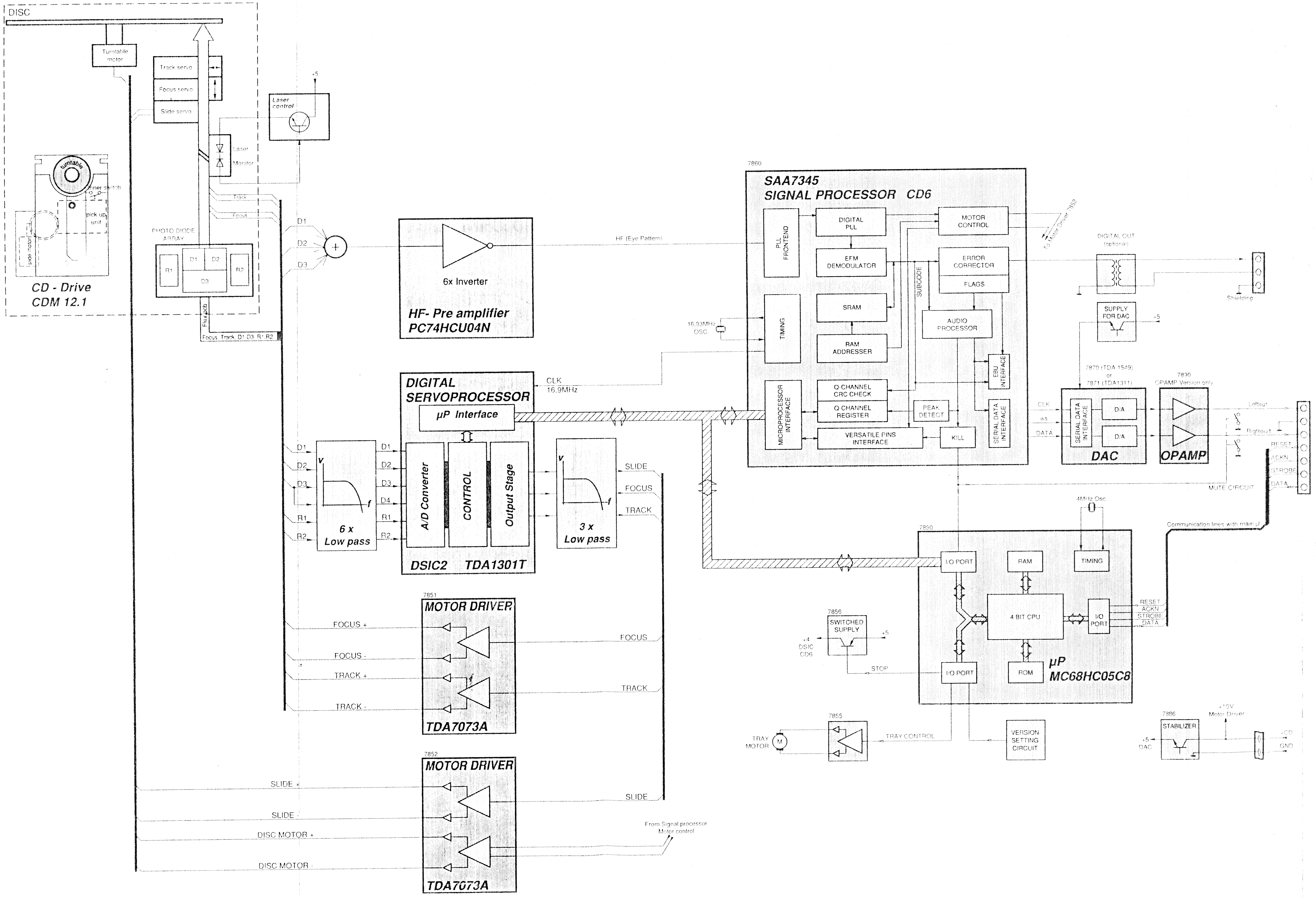
1) Turn the gear wheel (b) clockwise to its endposition. (Use a small screwdriver as shown in Fig. 1 point 1)

   The tray has to move to inner position first and than the CD Mechanismn has to move to its upper position.

2) Turn the gear wheel (b) counter clockwise to its endposition.

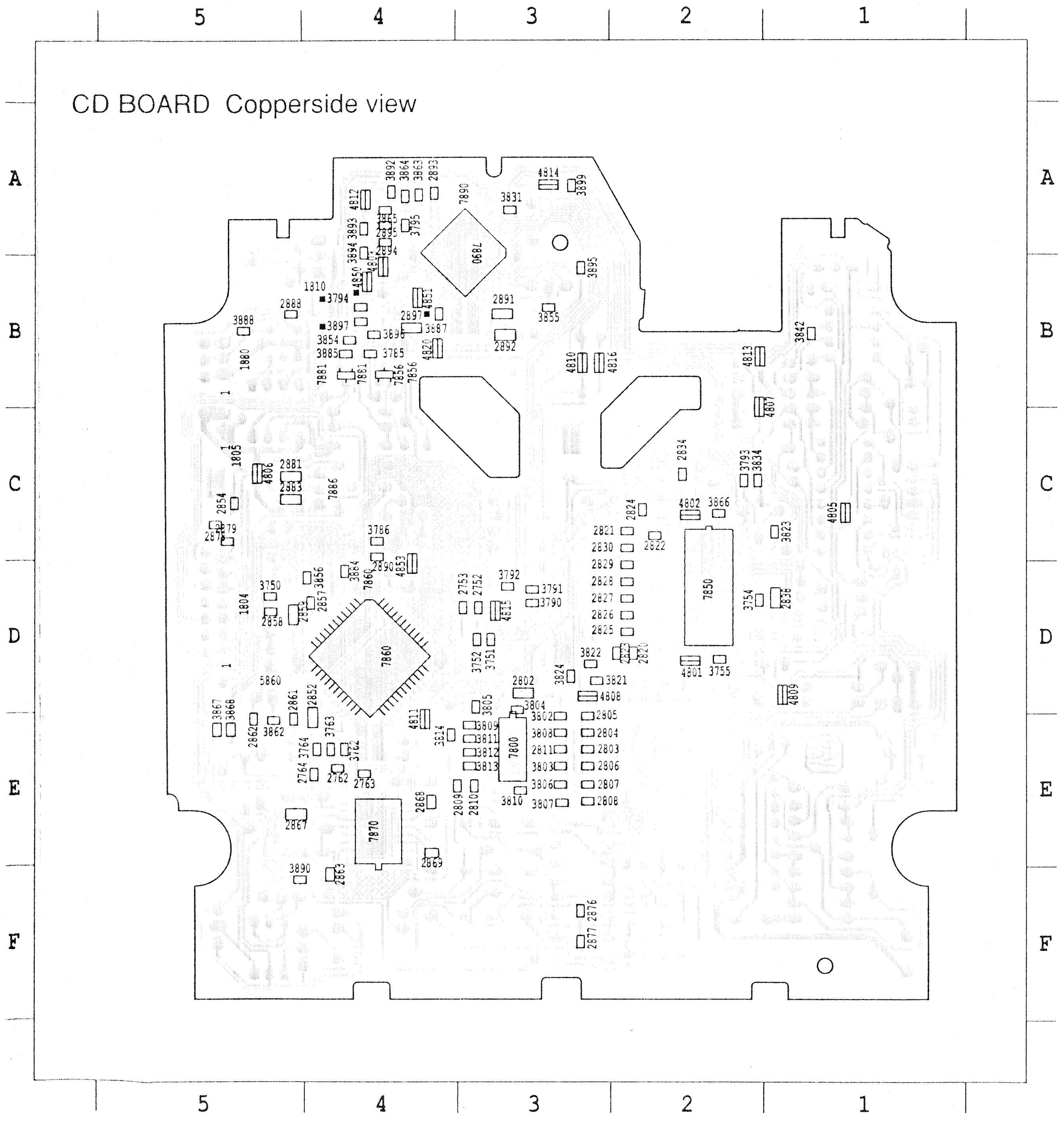
   The CD Mechanismn has to move to its lower position first and than the tray has to move to outside.

BLOCKDIAGRAM Short Loader

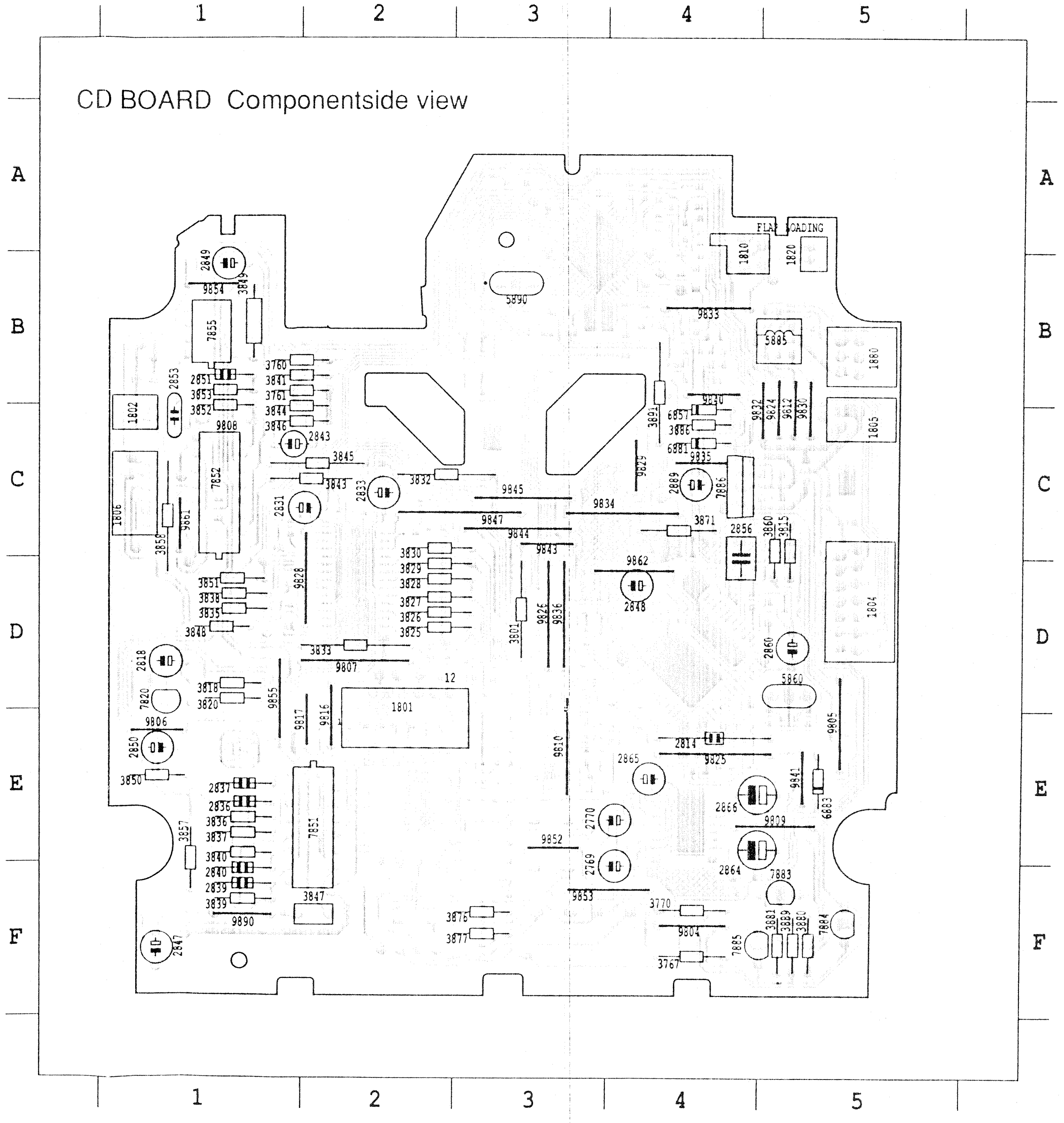

DISC
Turntable motor
Track servo
Focus servo
Slide servo
Laser
Monitor
Laser control
+5
turntable
inner switch
pick up unit
slide motor
CD - Drive
CDM 12.1
PHOTO DIODE ARRAY
D1
D2
D3
R1
R2
Track
Focus
Flex pcb
Focus, Track, D1-D3, R1,R2
6x Inverter
HF- Pre amplifier
PC74HCU04N
HF (Eye Pattern)
DIGITAL SERVOPROCESSOR
μP Interface
CLK
16.9MHz
A/D Converter
CONTROL
Output Stage
DSIC2
TDA1301T
D4
6 x Low pass
3 x Low pass
v
f
SLIDE
FOCUS
TRACK
7851
MOTOR DRIVER
TDA7073A
FOCUS +
FOCUS -
TRACK +
TRACK -
7852
SLIDE +
SLIDE -
DISC MOTOR +
DISC MOTOR -
From Signal processor Motor control
7860
SAA7345
SIGNAL PROCESSOR CD6
PLL FRONTEND
DIGITAL PLL
MOTOR CONTROL
EFM DEMODULATOR
ERROR CORRECTOR
FLAGS
SUBCODE
TIMING
SRAM
AUDIO PROCESSOR
RAM ADDRESSER
EBU INTERFACE
MICROPROCESSOR INTERFACE
Q-CHANNEL CRC CHECK
Q CHANNEL REGISTER
PEAK DETECT
VERSATILE PINS INTERFACE
KILL
SERIAL DATA INTERFACE
16.93MHz OSC
To Motor Driver 7852
DIGITAL OUT (optional)
Shielding
SUPPLY FOR DAC
+5
7870 (TDA 1549) or 7871 (TDA1311)
7830 OPAMP Version only
CLK
WS
DATA
SERIAL DATA INTERFACE
D/A
DAC
OPAMP
Leftout
Rightout
RESET
ACKN
STROBE
DATA
MUTE CIRCUIT
4MHz Osc.
Communication lines with main μP
7890
I/O PORT
RAM
TIMING
4 BIT CPU
I/O PORT
ROM
μP
MC68HC05C8
7856
SWITCHED SUPPLY
+4 DSIC CD6
+5
STOP
7855
TRAY MOTOR
M
TRAY CONTROL
VERSION SETTING CIRCUIT
7886
STABILIZER
+5 DAC
+10V Motor Driver
+CD
GND

CD Short Loader

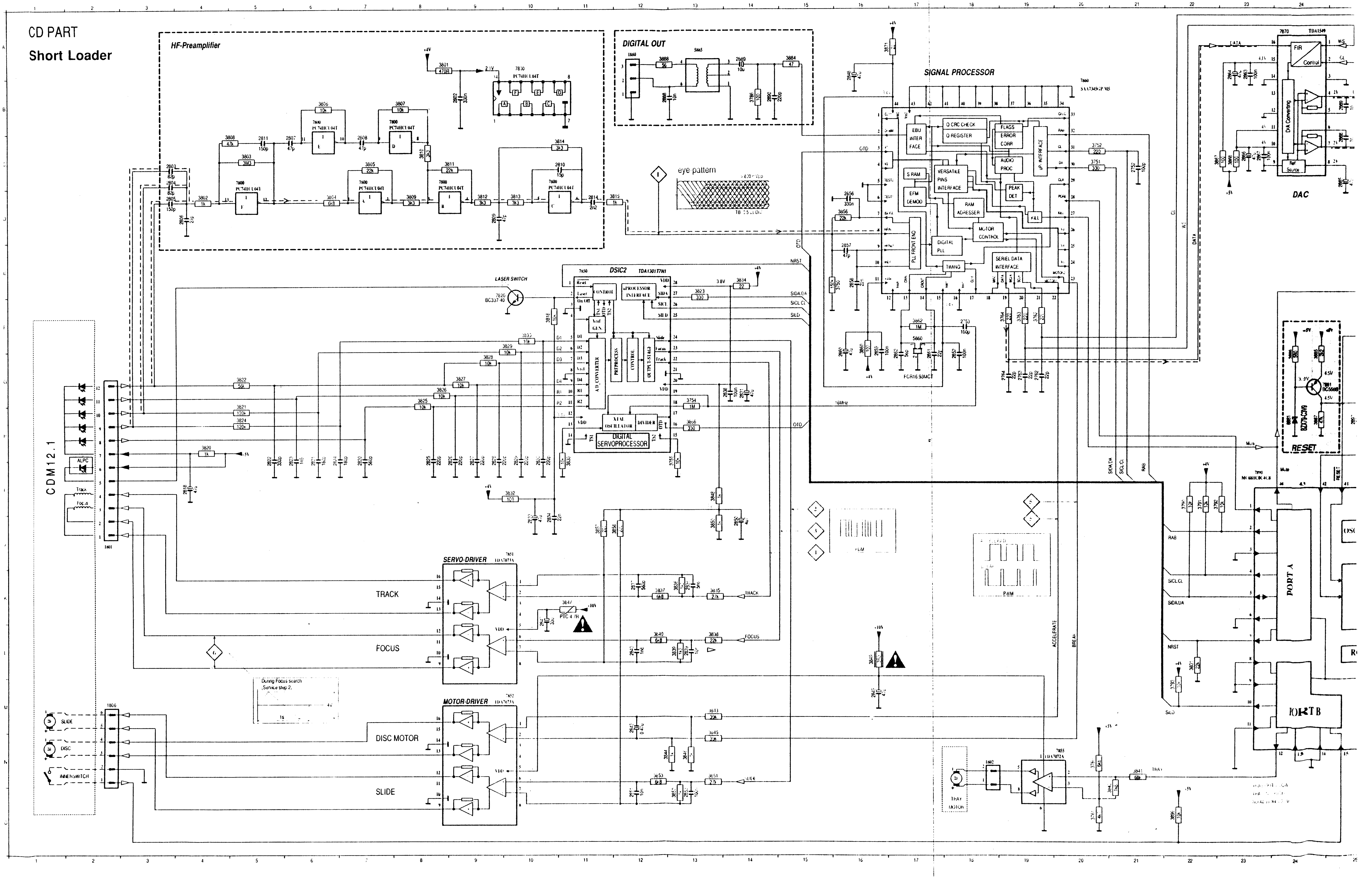
2752 D 3
2753 D 3
2762 E 4
2763 E 4
2764 E 5
2802 D 3
2804 D 3
2805 D 3
2806 E 3
2807 E 3
2808 E 3
2809 E 4
2810 E 4
2811 D 3
2820 D 3
2821 C 3
2822 C 2
2823 D 3
2825 D 3
2826 D 3
2827 D 3
2828 C 3
2829 C 3
2830 C 3
2834 C 2
2838 C 2
2852 D 5
2854 C 5
2857 D 5
2858 D 5
2861 D 5
2862 D 5
2876 F 3
2877 F 3
2878 C 5
2879 C 5
2881 C 5
2883 C 5
2888 B 5
2890 C 4
2891 B 3
2892 B 3
2894 A 4
2895 A 4
2897 B 4
3750 C 5
3751 D 4
3752 D 4
3754 D 2
3755 D 2
3762 D 4
3763 D 5
3764 D 5
3785 B 4
3790 D 3
3791 C 3
3792 C 3
3793 C 2
3794 B 4
3795 A 4
3802 D 3
3803 E 3
3804 D 3
3805 D 4
3806 E 3
3807 E 3
3809 D 4
3810 E 3
3811 D 4
3812 E 4
3813 E 4
3814 D 4
3821 D 3
3822 D 3
3823 C 2
3824 D 3
3831 A 3
3834 C 2
3854 B 4
3855 B 3
3856 C 5
3862 D 5
3863 A 4
3864 A 4
3865 A 4
3866 C 2
3867 D 5
3884 C 4
3885 B 4
3887 B 4
3888 B 5
3892 A 4
3893 A 4
3894 A 4
3895 A 3
3896 B 4
3897 B 4
3899 A 3
4801 D 2
4802 C 2
4803 A 4
4805 C 1
4806 C 5
4808 D 3
4809 D 2
4810 B 3
4811 D 4
4812 A 4
4813 B 2
4814 A 3
4815 D 3
4816 B 3
4820 B 4
4850 A 4
4851 B 4
7800 D 3
7850 C 2
7856 B 4
7860 D 4
7880 F 2
7871 E 4
7872 D 5
7881 B 4
7890 A 4



1801 D 2
1802 B 1
1804 D 5
1805 B 5
1806 C 1
1810 A 5
1820 A 5
1880 B 5
2769 E 4
2770 E 4
2814 D 4
2818 D 1
2831 C 2
2833 C 2
2836 E 1
2837 E 1
2839 E 1
2840 E 1
2843 C 2
2847 F 1
2848 C 4
2849 A 1
2850 E 1
2851 B 1
2853 B 1
2856 C 5
2860 D 5
2864 E 4
2865 E 4
2866 E 4
2870 E 3
2872 E 3
2873 F 2
2874 E 3
2875 F 4
2885 F 3
2889 C 4
3760 B 2
3761 B 2
3767 F 4
3770 F 4
3801 D 3
3815 C 5
3818 D 1
3820 D 1
3825 D 3
3826 D 3
3827 D 3
3828 C 3
3829 C 3
3830 C 3
3832 C 3
3833 D 2
3835 D 1
3836 E 1
3837 E 1
3838 C 1
3839 E 1
3840 E 1
3841 B 2
3843 C 2
3844 B 2
3845 C 2
3846 B 2
3847 F 2
3848 D 1
3849 B 1
3850 E 1
3851 C 1
3852 B 1
3853 B 1
3857 E 1
3858 C 1
3860 C 5
3869 E 3
3870 E 3
3871 C 4
3872 F 3
3873 F 3
3874 E 3
3875 F 2
3876 F 3
3877 F 3
3880 F 5
3881 F 5
3886 B 4
3889 F 5
3891 B 4
3898 F 3
5860 D 5
588[illegible] [illegible] 5
5890 A 3
6857 B 4
6881 C 4
6883 E 5
7820 D 1
7851 E 2
7852 C 1
7855 B 1
7883 E 5
7884 F 5
7885 F 5
7886 C 5
9804 F 4
9805 D 5
9806 D 1
9807 D 2
9808 B 1
9809 E 5
9810 D 3
9812 B 5
9816 D 2
9817 D 2
9824 B 5
9825 E 4
9826 D 3
9828 C 2
9829 C 4
9830 B 5
9832 B 5
9833 B 4
9834 C 4
9835 C 4
9836 D 3
9840 B 4
9841 E 5
9843 C 3
9844 C 3
9845 C 3
9847 C 3
9852 E 3
9853 E 4
9854 A 1
9855 D 2
9861 C 1
9862 C 4
9890 F 1



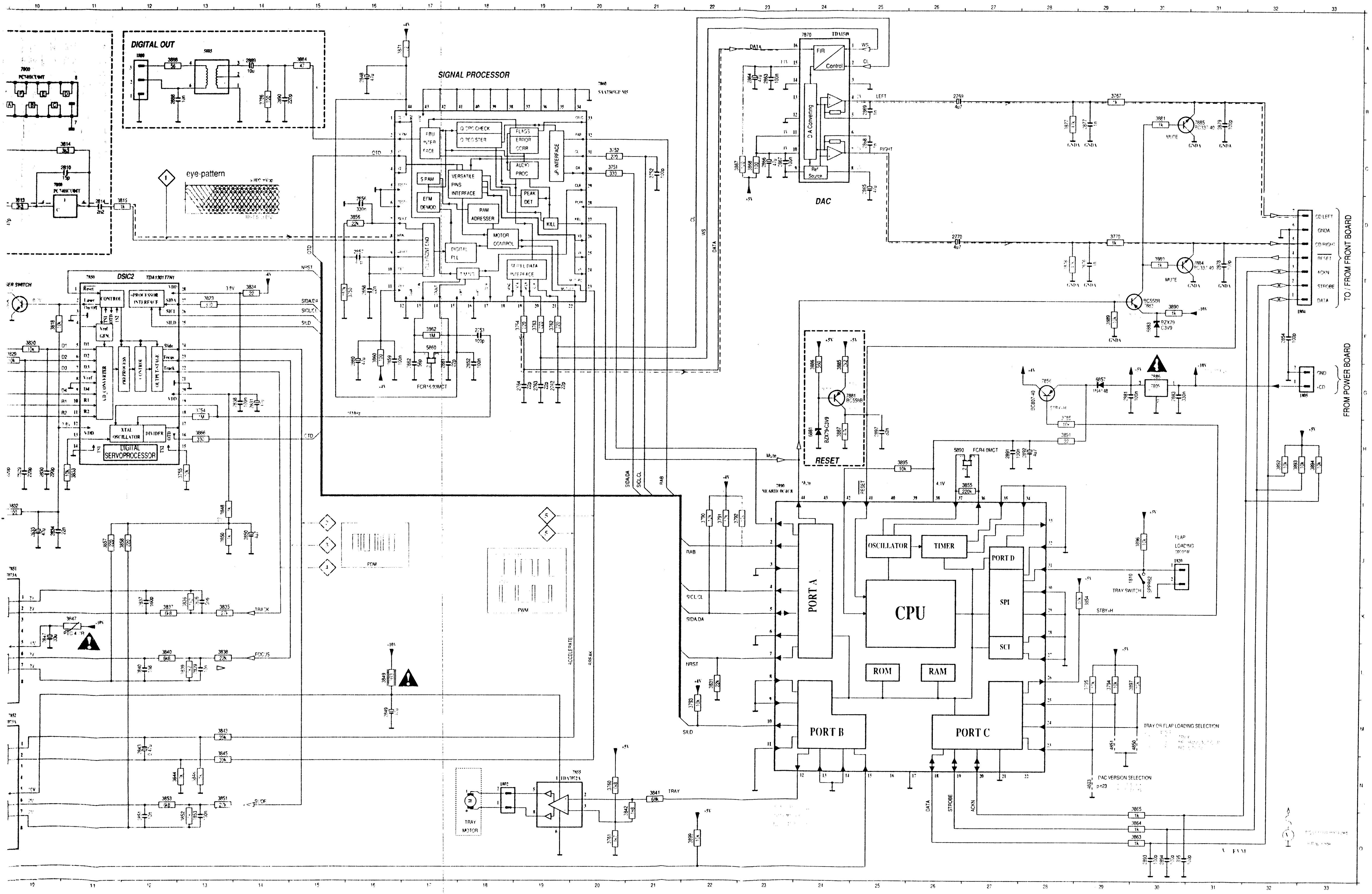
1801	J2	1806	O2	2752	C21	2764	G19	2803	C3	2807	C6	2811	C5	2821	H6	2825	H8	2829	H10	2834	J10	2839	L13	2848	A16	2852	G18	2857	E16	2861	G17	2865	C25	2869	B25	2879	B31	2889	A14	2893	O30	37	
1802	N18	1810	J30	2753	F18	2769	B26	2804	C3	2808	C7	2814	D11	2822	H5	2826	H9	2830	H10	2836	K13	2840	L12	2849	M16	2853	O13	2858	E16	2862	G17	2866	C23	2876	E29	2881	G29	2890	B14	2894	O30	37	
1804	F32	1820	J30	2762	G19	2770	D26	2805	D3	2809	D9	2818	I4	2823	H6	2827	H9	2831	H14	2837	K12	2843	M12	2850	J14	2854	F32	2859	F16	2863	A23	2867	C23	2877	B29	2883	G30	2891	H27	2895	O30	37	
1805	G32	1880	A12	2763	G19	2802	B9	2806	D4	2810	C11	2820	H7	2824	H6	2828	H9	2833	J10	2838	H14	2847	L10	2851	O12	2856	D16	2860	F16	2864	A23	2868	C25	2878	E31	2888	B12	2892	H28	2897	H25	37	


CD PART

Short Loader

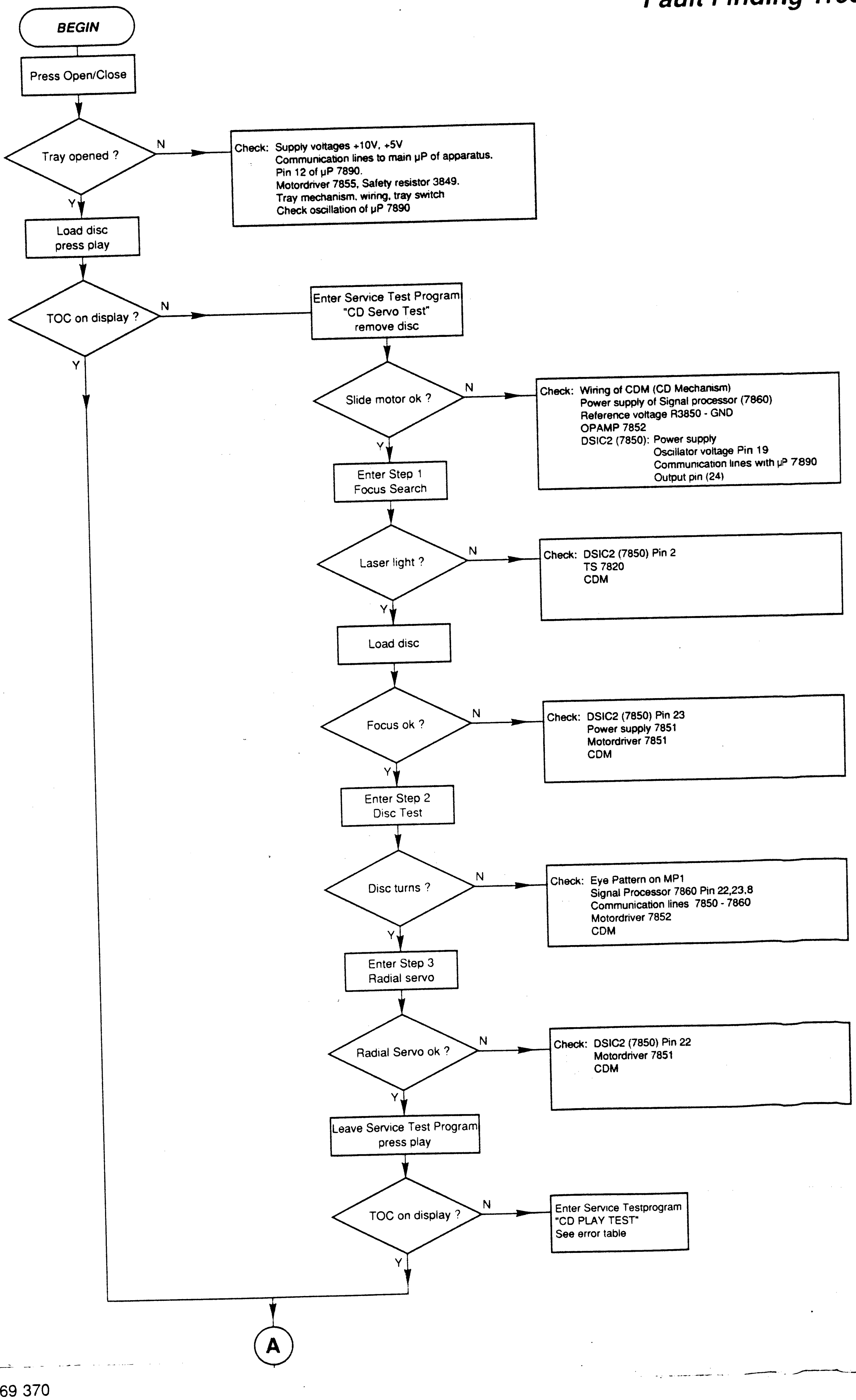
HF-Preamplifier
DIGITAL OUT
SIGNAL PROCESSOR
SAA7345GP/M5
EBU INTERFACE
Q CRC CHECK
Q REGISTER
FLAGS
ERROR CORR
AUDIO PROC
µP INTERFACE
VERSATILE PINS INTERFACE
S RAM
EFM DEMOD
RAM ADRESSER
PEAK DET
KILL
MOTOR CONTROL
DIGITAL PLL
PLL FRONT END
TIMING
SERIEL DATA INTERFACE
DAC
TDA1549
FIR
Control
DA Converting
Ref Source
DATA
WS
CL
eye pattern
DSIC2
TDA1301T/N1
CONTROL
µPROCESSOR INTERFACE
A/D CONVERTER
PREPROCESS
CONTROL
OUTPUT STAGE
XTAL OSCILLATOR
DIVIDER
DIGITAL SERVOPROCESSOR
LASER SWITCH
BC337-40
SIDA DA
SICL CL
SILD
OTD
NRST
16MHz
FCR16.93MCT
CDM12.1
ALPC
Track
Focus
SLIDE
DISC
INNENSWITCH
SERVO-DRIVER
TDA7073A
TRACK
FOCUS
MOTOR-DRIVER
DISC MOTOR
SLIDE
During Focus search (Service step 2)
PTC 4.7R
ACCELERATE
BREAK
PWM
TRAY MOTOR
RESET
BZ79-C3V9
BC556B
PORT A
PORT B
RAB
SICL CL
SIDA DA
NRST
SILD
Mute

2825	H8
2826	H9
2827	H9
2828	H9
2829	H10
2830	H10
2831	H14
2833	J10
2834	J10
2836	K13
2837	K12
2838	H14
2839	L13
2840	L12
2843	M12
2847	L10
2848	A16
2849	M16
2850	J14
2851	O12
2852	G18
2853	O13
2854	F32
2856	D16
2857	E16
2858	E16
2859	F16
2860	F16
2861	G17
2862	G17
2863	A23
2864	A23
2865	C25
2866	C23
2867	C23
2868	C25
2869	B25
2876	E29
2877	B29
2878	E31
2879	B31
2881	G29
2883	G30
2888	B12
2889	A14
2890	B14
2891	H27
2892	H28
2893	O30
2894	O30
2895	O30
2897	H25
3750	E16
3751	C20
3752	C20
3754	G13
3755	H13
3760	N20
3761	O20
3762	F19
3763	F19
3764	F19
3767	B29
3770	D29
3785	H28
3786	B14
3790	I22
3791	I22
3792	I22
3793	M22
3794	L29
3795	L29
3801	A8
3802	D4
3803	C5
3804	D6
3805	C7
3806	B6
3807	B8
3808	C5
3809	D8
3810	C8
3811	C9
3812	D9
3813	D10
3814	C11
3815	D12
3818	F10
3820	H4
3821	H5
3822	G5
3823	E13
3824	H5
3825	G8
3826	G8
3827	G9
3828	G9
3829	F10
3830	F10
3831	L22
3832	I10
3833	H11
3834	E14
3835	K13
3836	K13
3837	K12
3838	L13
3839	L13
3840	L12
3841	N21
3842	N21
3843	M13
3844	N12
3845	N13
3846	N13
3847	K11
3848	I13
3849	L16
3850	J13
3851	N13
3852	O13
3853	N12
3854	K29
3855	I27
3856	D16
3857	J11
3858	J12
3860	F16
3862	F17
3863	O30
3864	O30
3865	O30
3866	H13
3867	C22
3868	C23
3871	A16
3876	E28
3877	B28
3880	E30
3881	B30
3884	A15
3885	G24
3886	G24
3887	H24
3888	A12
3889	F29
3890	F30
3891	H28
3892	H32
3893	H32
3894	H33
3895	H25
3896	J30
3897	L30
3899	O22
4803	N29
4850	M30
4851	M29
5860	F17
5885	A13
5890	H26
6857	G29
6881	H24
6883	F30
7800	D5
7800	B7
7800	B6
7800	C10
7800	C8
7800	C7
7820	E10
7850	E11
7851	J9
7852	M9
7855	N20
7856	G28
7860	B20
7870	A24
7871	A23
7872	C24
7880	D27
7880	A27
7881	G24
7883	C30
7884	E31
7885	B31
7886	G30
7890	I23

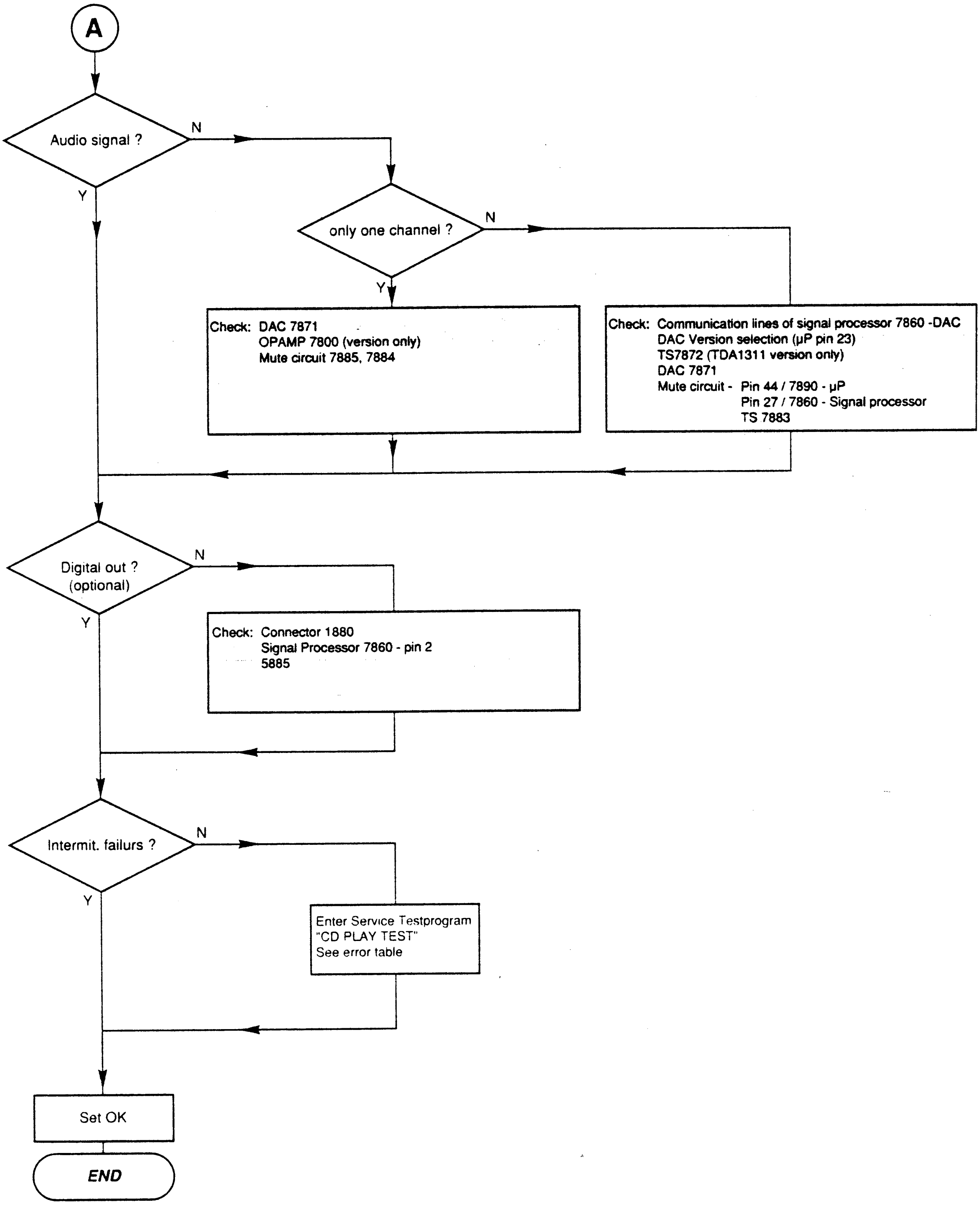

DIGITAL OUT
7800 PC74HCU04T
eye-pattern
SIGNAL PROCESSOR
7860 SAA7345GP/M5
EBU INTERFACE
Q CRC CHECK
Q REGISTER
FLAGS
ERROR CORR
AUDIO PROC
µP INTERFACE
S RAM
VERSATILE PINS INTERFACE
EFM DEMOD
RAM ADRESSER
PEAK DET
KILL
MOTOR CONTROL
DIGITAL PLL
TIMING
SERIAL DATA INTERFACE
FCR1593MCT
7870 TDA1549
FIR
Control
D-A Converting
Ref Source
DAC
LEFT
RIGHT
MUTE
CD LEFT
GNDA
CD RIGHT
RESET
ACKN
STROBE
DATA
TO / FROM FRONT BOARD
GND
+5D
FROM POWER BOARD
RESET
7881 BC558B
BZX79-C3V9
7850 TDA1301T/N1
DSIC2
CONTROL
µPROCESSOR INTERFACE
AD CONVERTER
PREPROCESS
CONTROL
OUTPUT STAGE
XTAL OSCILLATOR
DIVIDER
DIGITAL SERVOPROCESSOR
LASER SWITCH
TRACK
FOCUS
SLIDE
PDM
PWM
ACCELERATE
BREAK
7890 MC68HC05C8CFN
PORT A
OSCILLATOR
TIMER
PORT D
CPU
SPI
SCI
ROM
RAM
PORT B
PORT C
FCR4.0MCT
FLAP LOADING OPTION
TRAY SWITCH
STBY+H
TRAY OR FLAP LOADING SELECTION
DAC VERSION SELECTION
7855 TDA7072A
TRAY MOTOR
TRAY
SIDADA
SICLCL
SILD
NRST
RAB
DATA
STROBE
ACKN
WS
CL
DATA
Mute

PCS 69369

Fault Finding Tree


BEGIN
Press Open/Close
Tray opened ?
N
Check: Supply voltages +10V, +5V
Communication lines to main µP of apparatus.
Pin 12 of µP 7890.
Motordriver 7855, Safety resistor 3849.
Tray mechanism, wiring, tray switch
Check oscillation of µP 7890
Y
Load disc
press play
TOC on display ?
N
Enter Service Test Program
"CD Servo Test"
remove disc
Slide motor ok ?
N
Check: Wiring of CDM (CD Mechanism)
Power supply of Signal processor (7860)
Reference voltage R3850 - GND
OPAMP 7852
DSIC2 (7850): Power supply
Oscillator voltage Pin 19
Communication lines with µP 7890
Output pin (24)
Y
Enter Step 1
Focus Search
Laser light ?
N
Check: DSIC2 (7850) Pin 2
TS 7820
CDM
Y
Load disc
Focus ok ?
N
Check: DSIC2 (7850) Pin 23
Power supply 7851
Motordriver 7851
CDM
Y
Enter Step 2
Disc Test
Disc turns ?
N
Check: Eye Pattern on MP1
Signal Processor 7860 Pin 22,23,8
Communication lines 7850 - 7860
Motordriver 7852
CDM
Y
Enter Step 3
Radial servo
Radial Servo ok ?
N
Check: DSIC2 (7850) Pin 22
Motordriver 7851
CDM
Y
Leave Service Test Program
press play
TOC on display ?
N
Enter Service Testprogram
"CD PLAY TEST"
See error table
Y
Y
A

CD Short Loader


A
Audio signal ?
N
Y
only one channel ?
N
Y
Check: DAC 7871
OPAMP 7800 (version only)
Mute circuit 7885, 7884
Check: Communication lines of signal processor 7860 -DAC
DAC Version selection (μP pin 23)
TS7872 (TDA1311 version only)
DAC 7871
Mute circuit - Pin 44 / 7890 - μP
Pin 27 / 7860 - Signal processor
TS 7883
Digital out ?
(optional)
N
Y
Check: Connector 1880
Signal Processor 7860 - pin 2
5885
Intermit. failurs ?
N
Y
Enter Service Testprogram
"CD PLAY TEST"
See error table
Set OK
END

Abbreviations CD

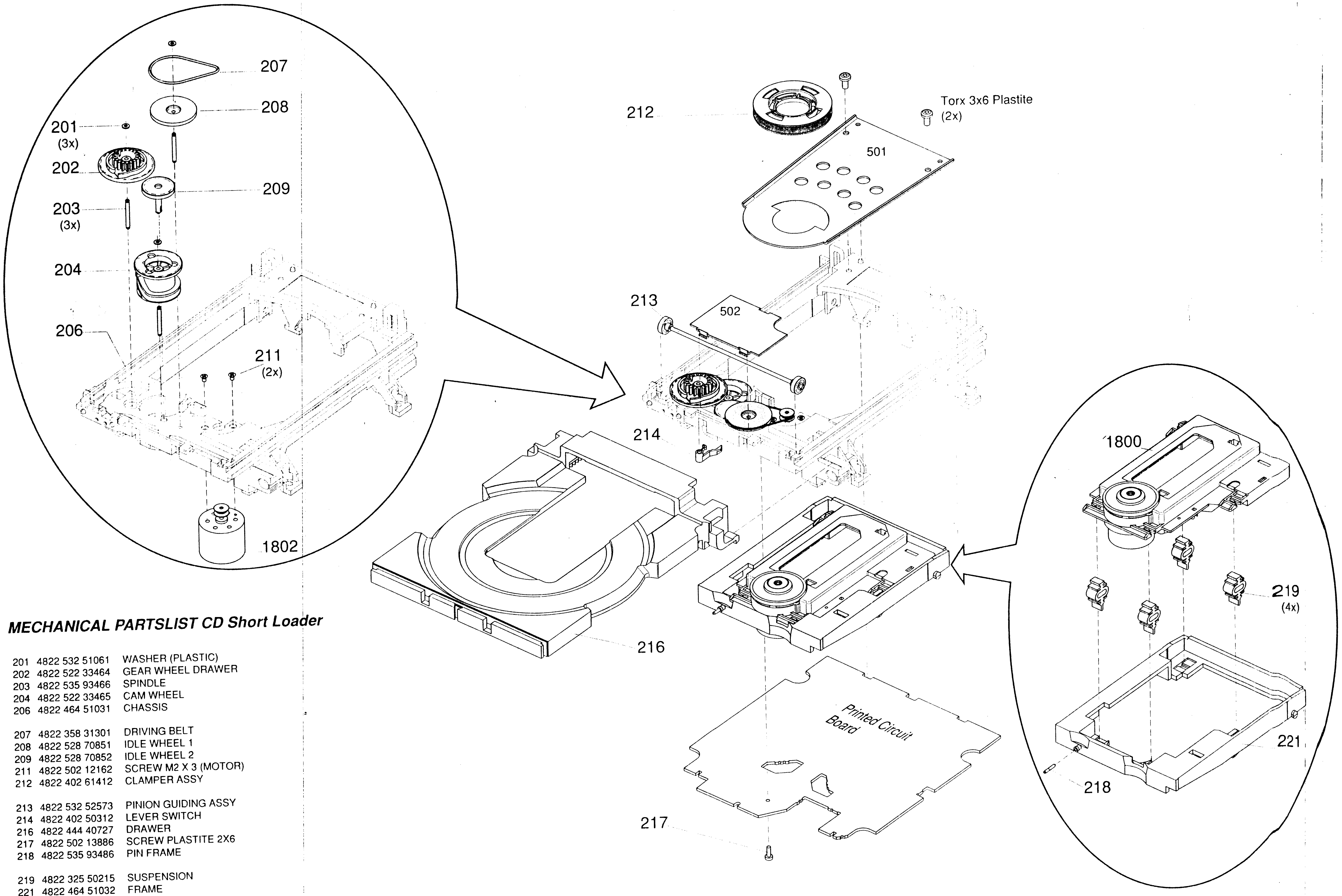
DSIC2

Pin	Name	Direction	Description
1	RESET	µP -> DSIC2	Reset input
2	Laser On/Of	DSIC -> Laser switch	Switches Laser on/off
3	Gnd	Gnd	Ground (Analog part)
4	VRH	not connected	Reference input for A/D converter
5	D1	Diode array -> DSIC2	Unipolar current input (Central diode signal input)
6	D2	Diode array -> DSIC2	Unipolar current input (Central diode signal input)
7	D3	Diode array -> DSIC2	Unipolar current input (Central diode signal input)
8	Vref	Gnd	Reference input for A/D converter
9	D4	Diode array -> DSIC2	Unipolar current input (Central diode signal input)
10	R1	Diode array -> DSIC2	Unipolar current input (Satelite diode signal input)
11	R2	Diode array -> DSIC2	Unipolar current input (Satelite diode signal input)
12	VDD		Supply for DSIC2 (Analog part)
13			
14	TS1	Gnd	Test input 1
15	TS2	Gnd	Test input 2
16	OTD	DSIC2 -> Signal Processor	Off Track Detection
17	CLO	not connected	Clock output
18	XTLO		Oscillator output
19	XTLI		Oscillator input
20	VDD		Supply for DSIC2 (Digital part)
21	Gnd		Ground (Digital part)
22	Track	DSIC2 -> Servo Driver	Radial actuator output
23	Focus	DSIC2 -> Servo Driver	Focus actuator output
24	Slide	DSIC2 -> Motor Driver	Sledge output
25	SILD	µP -> DSIC2	Serial Interface Load
26	SICL	µP -> DSIC2	Serial Interface Clock
27	SIDA	µP <-> DSIC2	Serial Interface Data
28	VDD		Supply for DSIC2 (Digital part)

SIGNAL PROCESSOR

Pin	Name	Direction	Description
1	CL11	not connected	11.2896MHz clock output (3-state)
2	DOMB	signal processor -> Digital out	digital bi-phase mark output (3-state)
3	V1	DSIC2 -> signal processor	versatile input pin of signal processor
4	V2	not connected	versatile input pin of signal processor
5	Test2	GND	test input of signal processor
6	Test1	GND	test input of signal processor
7	ISLICE	signal processor ->	current feedback from internal data slicer
8	HFIN	HF Pre-amp -> signal processor	comparator signal input
9	HFREF	HF Pre-amp -> signal processor	comparator signal input
10	IREF	-> signal processor	reference current pin (nom. VDD/2)
11	VDDA		supply (analog) of signal processor
12	VSSA		supply (analog) of signal processor
13	CRIN	X-Tal -> signal processor	crystal/resonator input of signal processor
14	CROUT	signal processor -> X-Tal	crystal/resonator output of signal processor
15	VDD1		supply for I/O-buffers of signal processor
16	VSS1		supply for I/O-buffers of signal processor
17	CL16	not connected	16.9344MHz clock output of signal processor
18	MISC	not connected	general purpose DAC output (3-state)
19	DATA	signal processor -> DAC	serial data output of signal processor (3-state)
20	WCLK	signal processor -> DAC	word clock output of signal processor (3-state)
21	SCLK	signal processor -> DAC	serial bit clock output of signal processor (3-state)
22	MOTOR1	signal processor -> Motor driver	motor output1 of signal processor; versatile (3-state)
23	MOTOR2	signal processor -> Motor driver	motor output2 of signal processor; versatile (3-state)
24	V5	not connected	versatile output pin of signal processor
25	V4	not connected	versatile output pin of signal processor
26	V3	not connected	versatile output pin of signal processor (open drain)
27	KILL	signal processor -> Mute circuit	kill output; programmable (open drain)
28	PORE	µP -> signal processor	power-on reset enable input (active low)
29	CLA	not connected	4.2336MHz microprocessor clock output
30	DA	µP <-> signal processor	interface data I/O-line
31	CL	µP -> signal processor	interface clock input line
32	RAB	µP -> signal processor	interface R/W and acknowledge input
33	CFLG	signal processor ->	correction flag output (open drain)
43	VSS2		digital supply for internal logic of signal processor
44	VDD2		digital supply for internal logic of signal processor

Exploded view CD Short Loader

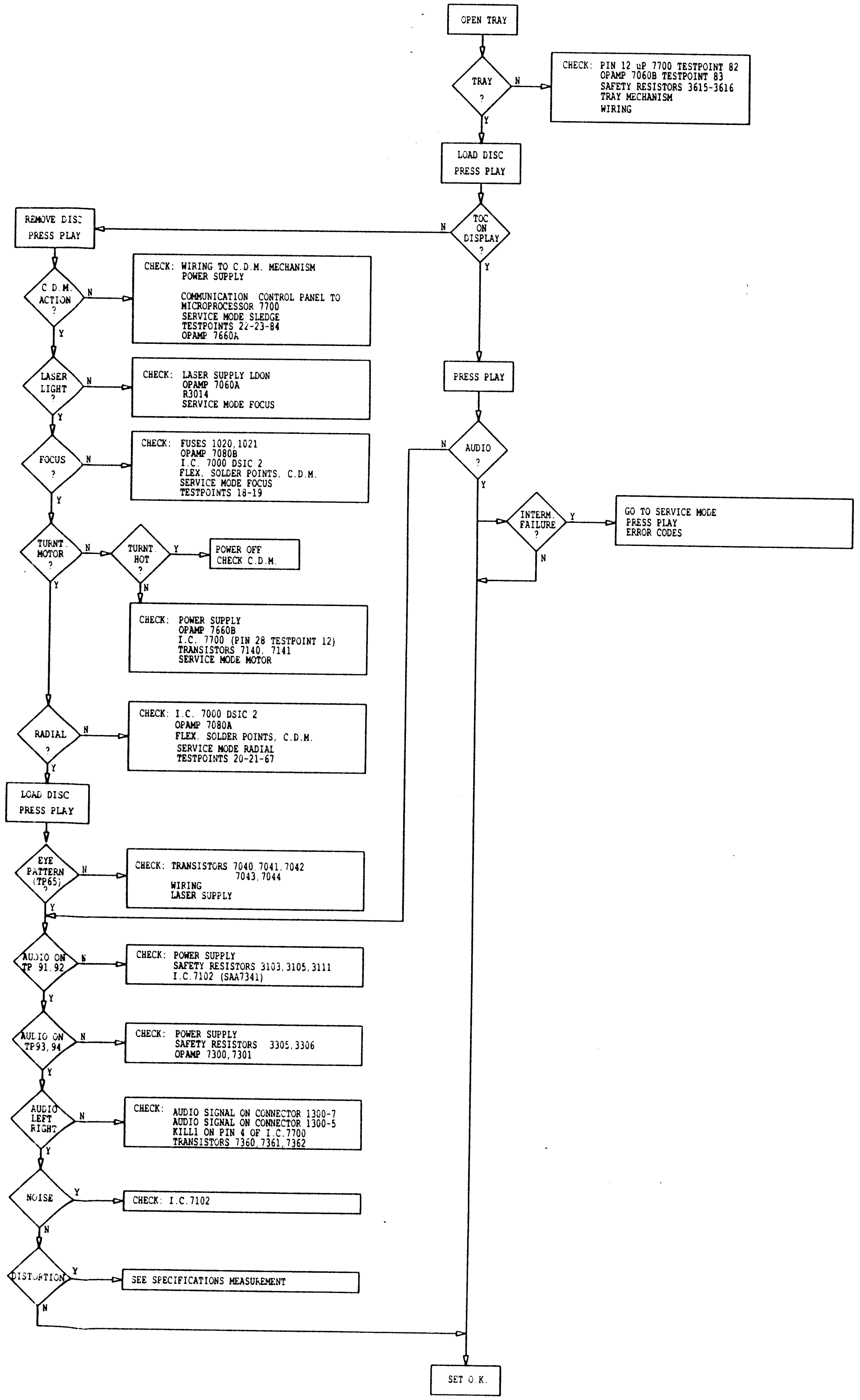

207
208
201
(3x)
202
209
203
(3x)
204
206
211
(2x)
1802
212
Torx 3x6 Plastite
(2x)
501
213
502
214
216
1800
219
(4x)
221
218
217
Printed Circuit Board

MECHANICAL PARTSLIST CD Short Loader

201	4822 532 51061	WASHER (PLASTIC)
202	4822 522 33464	GEAR WHEEL DRAWER
203	4822 535 93466	SPINDLE
204	4822 522 33465	CAM WHEEL
206	4822 464 51031	CHASSIS
207	4822 358 31301	DRIVING BELT
208	4822 528 70851	IDLE WHEEL 1
209	4822 528 70852	IDLE WHEEL 2
211	4822 502 12162	SCREW M2 X 3 (MOTOR)
212	4822 402 61412	CLAMPER ASSY
213	4822 532 52573	PINION GUIDING ASSY
214	4822 402 50312	LEVER SWITCH
216	4822 444 40727	DRAWER
217	4822 502 13886	SCREW PLASTITE 2X6
218	4822 535 93486	PIN FRAME
219	4822 325 50215	SUSPENSION
221	4822 464 51032	FRAME
1800	4822 691 30278	CDM 12.1 ASSY
1802	4822 361 21708	MOTOR ASSY
	4822 502 30735	SCREW 3 X 6 PLASTITE

CD REPAIR CHART

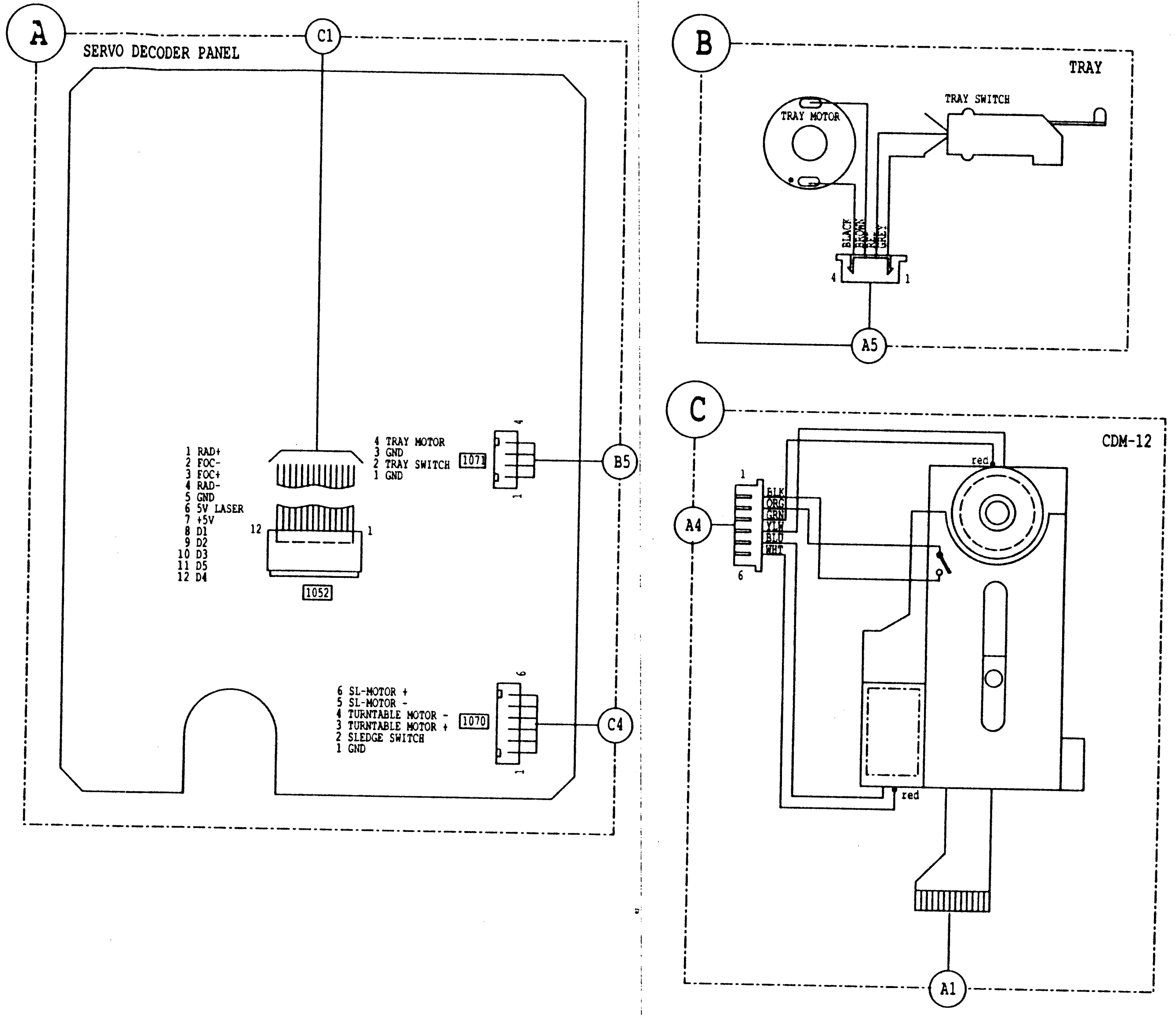
CD MINI BRICK


OPEN TRAY
TRAY ?
N
CHECK: PIN 12 uP 7700 TESTPOINT 82
OPAMP 7060B TESTPOINT 83
SAFETY RESISTORS 3615-3616
TRAY MECHANISM
WIRING
Y
LOAD DISC
PRESS PLAY
TOC ON DISPLAY ?
N
Y
REMOVE DISC
PRESS PLAY
C.D.M. ACTION ?
N
CHECK: WIRING TO C.D.M. MECHANISM
POWER SUPPLY
COMMUNICATION CONTROL PANEL TO
MICROPROCESSOR 7700
SERVICE MODE SLEDGE
TESTPOINTS 22-23-84
OPAMP 7660A
Y
LASER LIGHT ?
N
CHECK: LASER SUPPLY LDON
OPAMP 7060A
R3014
SERVICE MODE FOCUS
Y
FOCUS ?
N
CHECK: FUSES 1020,1021
OPAMP 7080B
I.C. 7000 DSIC 2
FLEX, SOLDER POINTS, C.D.M.
SERVICE MODE FOCUS
TESTPOINTS 18-19
Y
TURNT. MOTOR ?
N
TURNT. HOT ?
Y
POWER OFF
CHECK C.D.M.
N
CHECK: POWER SUPPLY
OPAMP 7660B
I.C. 7700 (PIN 28 TESTPOINT 12)
TRANSISTORS 7140, 7141
SERVICE MODE MOTOR
Y
RADIAL ?
N
CHECK: I.C. 7000 DSIC 2
OPAMP 7080A
FLEX, SOLDER POINTS, C.D.M.
SERVICE MODE RADIAL
TESTPOINTS 20-21-67
Y
LOAD DISC
PRESS PLAY
EYE PATTERN (TP65) ?
N
CHECK: TRANSISTORS 7040,7041,7042
7043,7044
WIRING
LASER SUPPLY
Y
AUDIO ON TP 91,92
N
CHECK: POWER SUPPLY
SAFETY RESISTORS 3103,3105,3111
I.C.7102 (SAA7341)
Y
AUDIO ON TP93,94
N
CHECK: POWER SUPPLY
SAFETY RESISTORS 3305,3306
OPAMP 7300,7301
Y
AUDIO LEFT RIGHT
N
CHECK: AUDIO SIGNAL ON CONNECTOR 1300-7
AUDIO SIGNAL ON CONNECTOR 1300-5
KILL1 ON PIN 4 OF I.C.7700
TRANSISTORS 7360,7361,7362
Y
NOISE
Y
CHECK: I.C.7102
N
DISTORTION
Y
SEE SPECIFICATIONS MEASUREMENT
N
PRESS PLAY
AUDIO ?
N
Y
INTERM. FAILURE ?
Y
GO TO SERVICE MODE
PRESS PLAY
ERROR CODES
N
SET O.K.

HAS1082
9218

CD WIRING

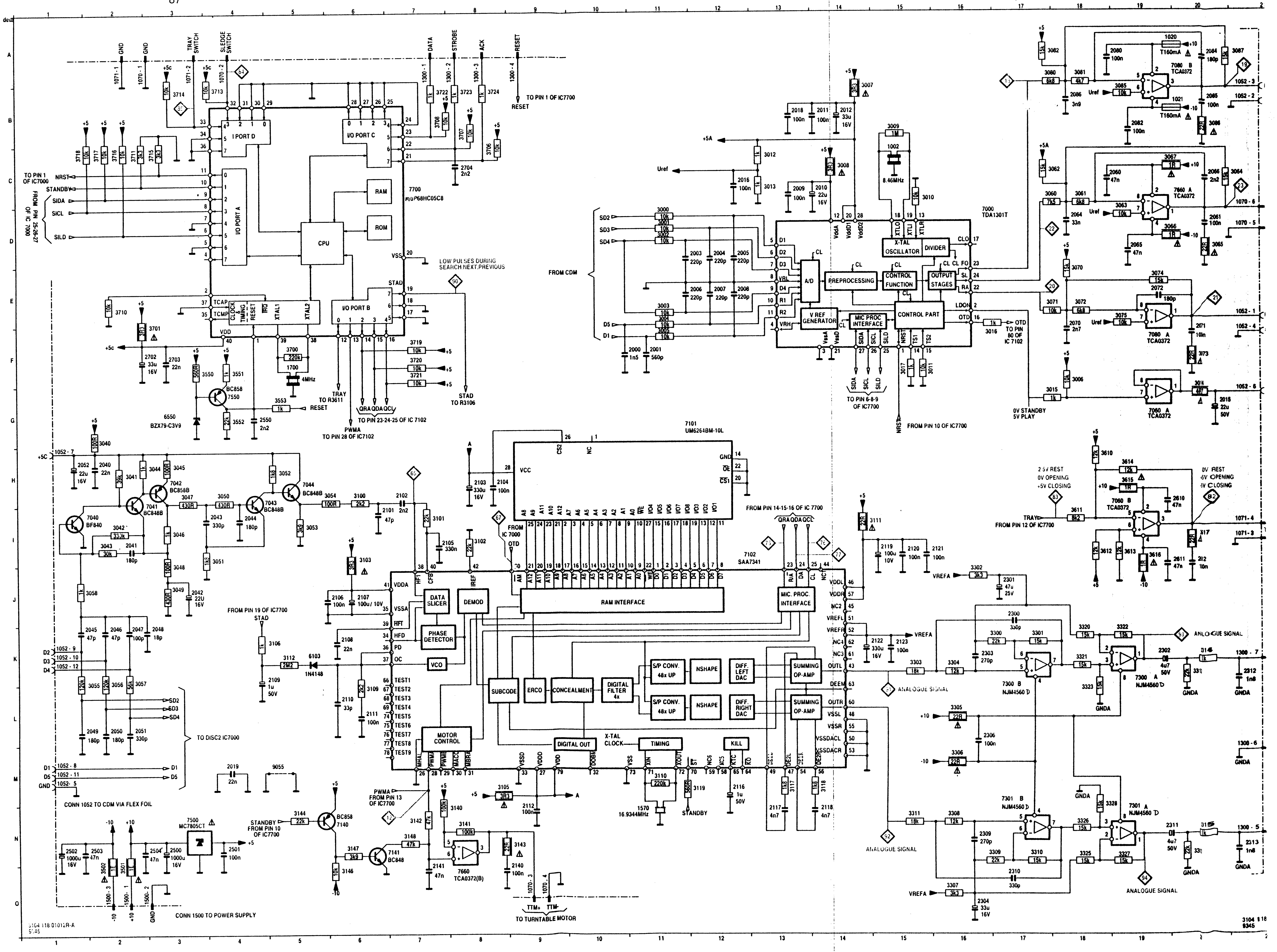
CD MINI BRICK

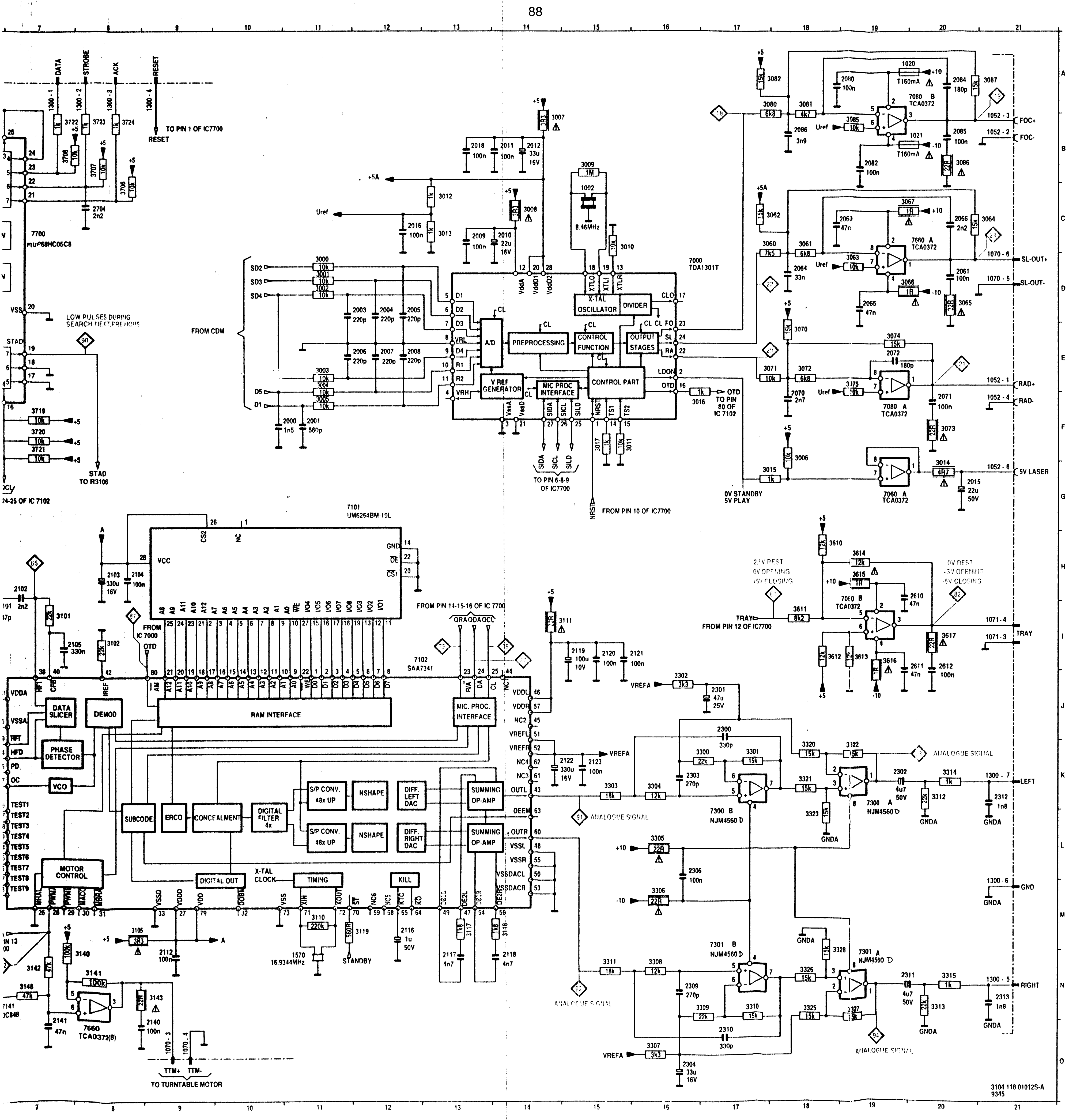

A
C1
SERVO DECODER PANEL
1 RAD+
2 FOC-
3 FOC+
4 RAD-
5 GND
6 5V LASER
7 +5V
8 D1
9 D2
10 D3
11 D5
12 D4
12
1
1052
4 TRAY MOTOR
3 GND
2 TRAY SWITCH
1 GND
1071
4
1
B5
6 SL-MOTOR +
5 SL-MOTOR -
4 TURNTABLE MOTOR -
3 TURNTABLE MOTOR +
2 SLEDGE SWITCH
1 GND
1070
6
1
C4
B
TRAY
TRAY MOTOR
TRAY SWITCH
BLACK
BROWN
GREY
4
1
A5
C
CDM-12
A4
1
BLK
ORG
GRN
YLW
BLU
WHT
6
red
red
A1

HAS1096
9235

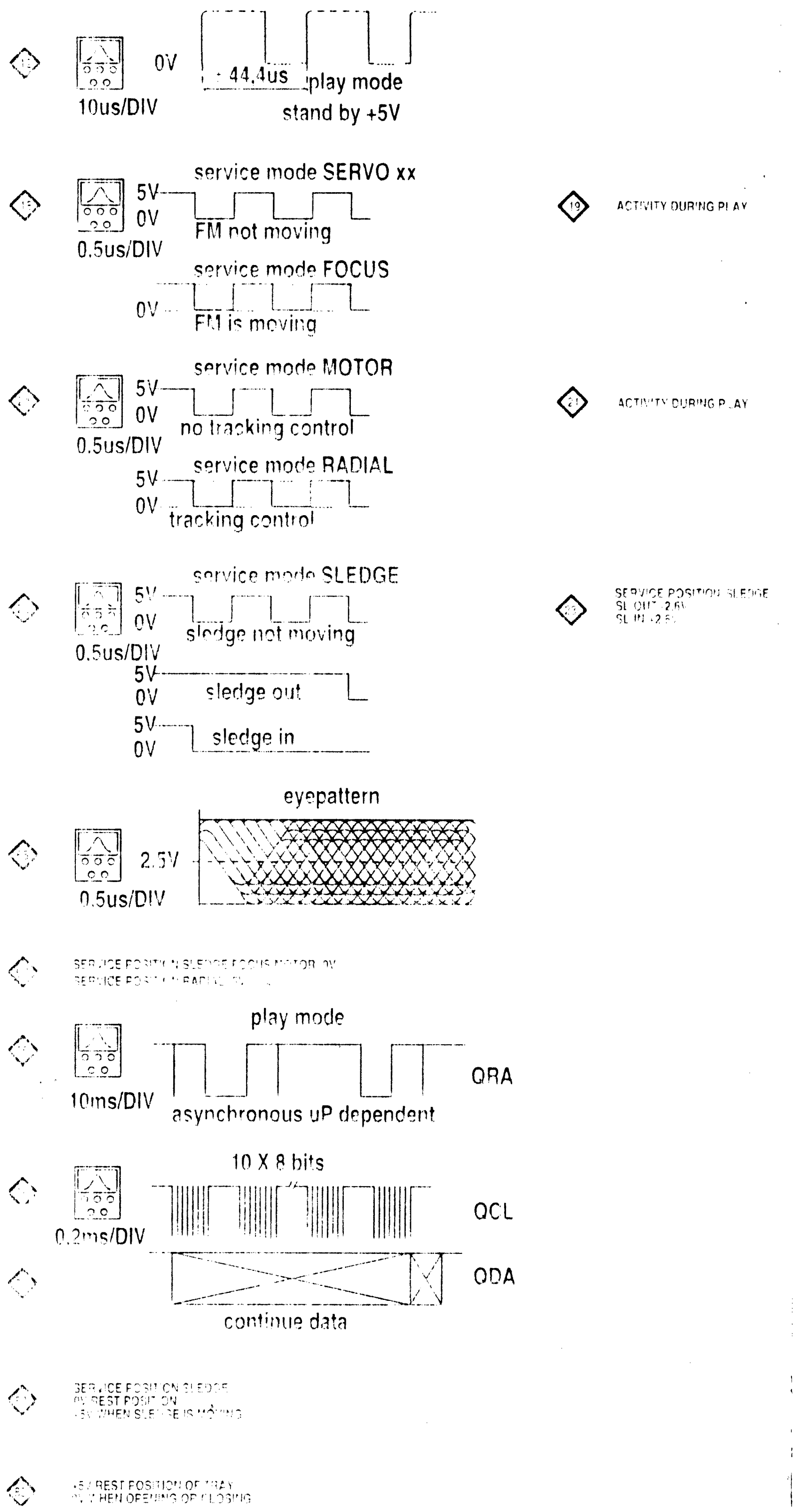
CD CIRCUIT

CD MINI BRICK


GND
TRAY SWITCH
SLEDGE SWITCH
DATA
STROBE
ACK
RESET
TO PIN 1 OF IC7700
I PORT D
I/O PORT C
I/O PORT A
I/O PORT B
CPU
RAM
ROM
7700
mP68HC05C8
TO PIN 1 OF IC7000
NRST
STANDBY
SIDA
SICL
SILD
FROM PIN 25-26-27 OF IC 7000
LOW PULSES DURING SEARCH NEXT,PREVIOUS
CLOCK TIMING
RESET
XTAL1
XTAL2
4MHz
BC858
7550
6550
BZX79-C3V9
TRAY TO R3611
PWMA TO PIN 28 OF IC7102
QRA QDA QCL
TO PIN 23-24-25 OF IC 7102
STAD TO R3106
7000
TDA1301T
FROM CDM
SD2
SD3
SD4
D5
D1
A/D
PREPROCESSING
CONTROL FUNCTION
OUTPUT STAGES
X-TAL OSCILLATOR
DIVIDER
V REF GENERATOR
MIC PROC INTERFACE
CONTROL PART
8.46MHz
OTD TO PIN 80 OF IC 7102
TO PIN 6-8-9 OF IC7700
FROM PIN 10 OF IC7700
7101
UM6264BM-10L
7040 BF840
7041 BC848B
7042 BC858B
7043 BC848B
7044 BC848B
FROM IC 7000 OTD
FROM PIN 14-15-16 OF IC 7700
7102
SAA7341
DATA SLICER
DEMOD
PHASE DETECTOR
VCO
RAM INTERFACE
MIC. PROC. INTERFACE
MOTOR CONTROL
SUBCODE
ERCO
CONCEALMENT
DIGITAL FILTER 4x
S/P CONV. 48x UP
NSHAPE
DIFF. LEFT DAC
DIFF. RIGHT DAC
SUMMING OP-AMP
DIGITAL OUT
X-TAL CLOCK
TIMING
KILL
16.9344MHz
STANDBY
FROM PIN 19 OF IC7700 STAD
1N4148
TO DISC2 IC7000
CONN 1052 TO CDM VIA FLEX FOIL
7500 MC7805CT
CONN 1500 TO POWER SUPPLY
STANDBY FROM PIN 10 OF IC7700
BC858 7140
7141 BC848
PWMA FROM PIN 13 OF IC7700
7660 TCA0372(B)
TTM+ TTM-
TO TURNTABLE MOTOR
7080 B TCA0372
7080 A TCA0372
7060 A TCA0372
7060 B TCA0372
T160mA
0V STANDBY 5V PLAY
2.5V REST 0V OPENING +5V CLOSING
TRAY FROM PIN 12 OF IC7700
0V REST 5V OPENING -5V CLOSING
VREFA
ANALOGUE SIGNAL
7300 B NJM4560
7300 A NJM4560
7301 B NJM4560
7301 A NJM4560
GNDA
1052-3
1052-2
1070-6
1070-5
1052-1
1052-4
1052-6
1071-4
1071-3
1300-7
1300-6
1300-5
3104 118 01012R-A 5145
3104 118 9345


7700
mP68HC05C8
DATA
STROBE
ACK
RESET
TO PIN 1 OF IC7700
LOW PULSES DURING SEARCH NEXT/PREVIOUS
STAD TO R3106
7000
TDA1301T
FROM CDM
SD2
SD3
SD4
D5
D1
A/D
PREPROCESSING
CONTROL FUNCTION
OUTPUT STAGES
X-TAL OSCILLATOR
DIVIDER
V REF GENERATOR
MIC PROC INTERFACE
CONTROL PART
8.46MHz
TO PIN 6-8-9 OF IC7700
FROM PIN 10 OF IC7700
TO PIN 80 OF IC 7102
FOC+
FOC-
SL-OUT+
SL-OUT-
RAD+
RAD-
5V LASER
7080 B TCA0372
7060 A TCA0372
7080 A TCA0372
7060 B TCA0372
0V STANDBY
5V PLAY
TRAY
FROM PIN 12 OF IC7700
2.5V REST
0V OPENING
+5V CLOSING
0V REST
-5V OPENING
+5V CLOSING
7101
UM6264BM-10L
7102
SAA7341
FROM PIN 14-15-16 OF IC 7700
DATA SLICER
DEMOD
PHASE DETECTOR
VCO
RAM INTERFACE
MIC. PROC. INTERFACE
SUBCODE
ERCO
CONCEALMENT
DIGITAL FILTER 4x
S/P CONV. 48x UP
NSHAPE
DIFF. LEFT DAC
DIFF. RIGHT DAC
SUMMING OP-AMP
MOTOR CONTROL
DIGITAL OUT
X-TAL CLOCK
TIMING
KILL
1570
16.9344MHz
STANDBY
7660
TCA0372(8)
TO TURNTABLE MOTOR
TTM+
TTM-
VREFA
7300 B NJM4560 D
7300 A NJM4560 D
7301 B NJM4560 D
7301 A NJM4560 D
ANALOGUE SIGNAL
LEFT
RIGHT
GND
GNDA
3104 118 01012S-A
9345

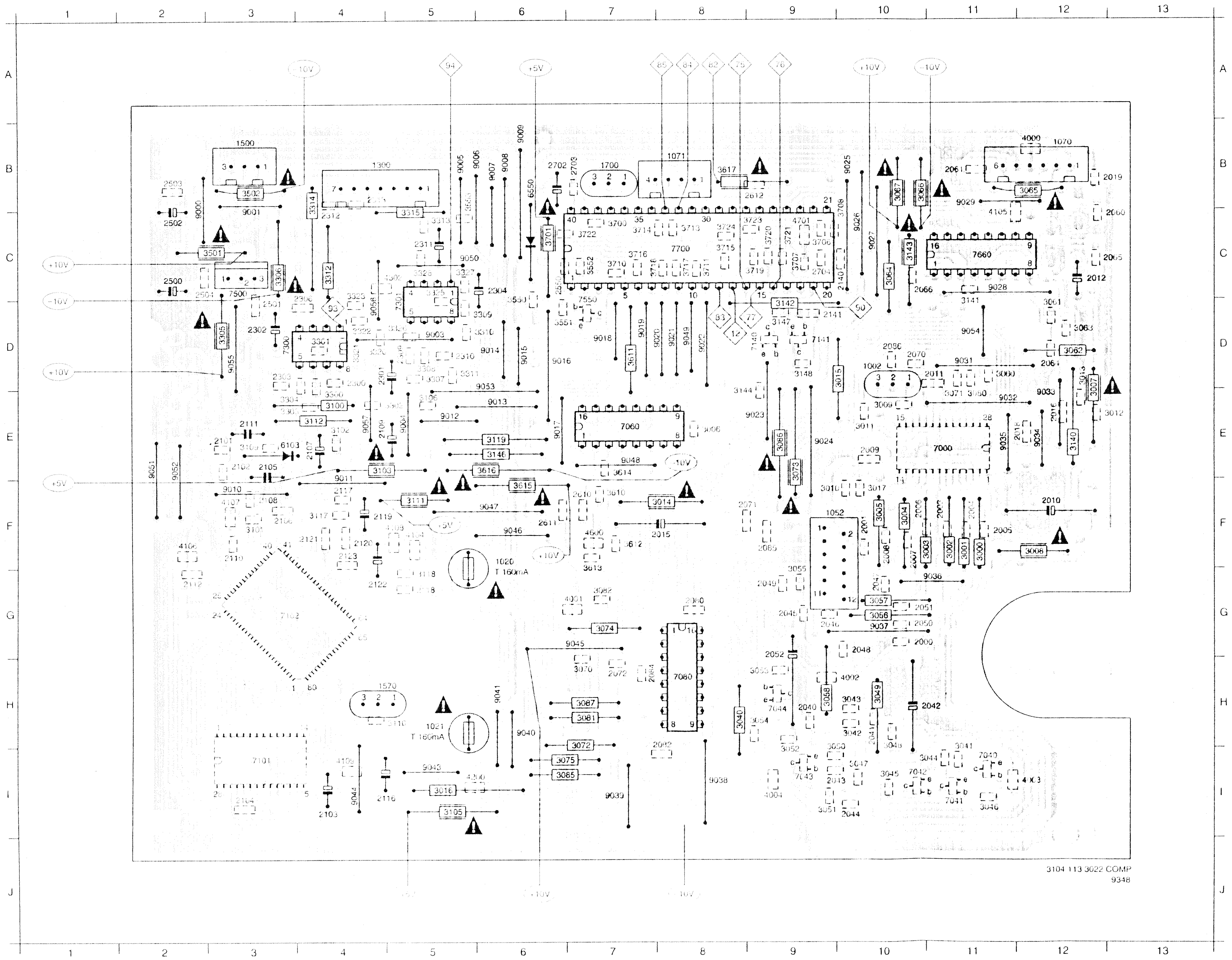
1002	C15
1020	A20
1021	B20
1052	K 1
1052	K 1
1052	M 1
1052	M 1
1052	K 1
1052	M 1
1052	H 1
1052	B21
1052	G21
1052	F21
1052	E21
1052	B21
1070	O 9
1070	O 9
1070	A 4
1070	A 2
1070	D21
1070	D21
1071	A 3
1071	A 2
1071	I21
1071	I21
1300	A 9
1300	A 8
1300	A 8
1300	A 7
1300	K21
1300	N21
1300	M21
1500	O 2
1500	O 2
1500	O 2
1570	N11
1700	F 5
2000	F11
2001	F11
2003	D12
2004	D12
2005	D12
2006	E12
2007	E12
2008	E12
2009	C13
2010	C14
2011	B14
2012	B14
2015	G20
2016	C12
2018	B13
2019	M 4
2040	H 2
2041	I 2
2042	J 3
2043	I 4
2044	I 4
2045	K 1
2046	K 2
2047	K 2
2048	K 3
2049	L 1
2050	L 2
2051	L 2
2052	H 1
2060	C18
2061	D20
2064	D18
2065	D19
2066	C20
2070	F18
2071	F20
2072	E19
2080	A19
2082	B19
2084	A20
2085	B20
2086	B18
2101	I 6
2102	H 7
2103	H 8
2104	H 8
2105	I 7
2106	J 6
2107	J 6
2108	K 6
2109	K 5
2110	L 6
2111	L 6
2112	N 9
2116	M12
2117	N13
2118	N14
2119	I15
2120	I15
2121	I15
2122	K14
2123	K15
2140	O 9
2141	O 7
2300	J17
2301	J17
2302	K19
2303	K16
2304	O16
2306	L16
2309	N16
2310	O17
2311	N19
2312	K21
2313	N21
2500	N 3
2501	N 4
2502	N 1
2503	N 2
2504	N 3
2550	G 4
2610	H20
2611	I20
2612	I20
2702	F 2
2703	F 3
2704	C 8
3000	D11
3001	D11
3002	D11
3003	E11
3004	E11
3005	F11
3006	F18
3007	B14
3008	C14
3009	B15
3010	C15
3011	F16
3012	C13
3013	C13
3014	G20
3015	G18
3016	F16
3017	F15
3040	G 2
3041	H 2
3042	I 2
3043	I 2
3044	H 3
3045	H 3
3046	I 3
3047	H 3
3048	J 3
3049	J 3
3050	H 4
3051	I 4
3052	H 5
3053	I 5
3054	H 6
3055	L 2
3056	K 2
3057	K 2
3058	J 2
3060	C18
3061	C18
3062	C17
3063	D19
3064	C21
3065	D20
3066	D19
3067	C19
3070	E18
3071	E18
3072	E18
3073	F20
3074	E19
3075	E19
3080	A18
3081	A18
3082	A17
3085	B19
3086	B20
3087	A21
3100	H 6
3101	I 7
3102	I 8
3103	I 6
3105	M 8
3106	K 5
3109	L 6
3110	M11
3111	I14
3112	K 5
3117	M13
3118	M14
3119	M12
3140	N 8
3141	N 8
3142	N 7
3143	N 9
3144	N 5
3146	O 6
3147	N 6
3148	N 7
3300	K16
3301	K17
3302	J16
3303	K15
3304	K16
3305	L16
3306	M16
3307	O16
3308	N16
3309	N16
3310	N17
3311	N15
3312	K20
3313	N20
3314	K20
3315	N20
3320	K18
3321	K18
3322	K19
3323	L18
3325	N18
3326	N18
3327	N19
3328	M18
3501	O 2
3502	O 2
3550	F 3
3551	F 4
3552	G 4
3553	G 5
3610	H18
3611	I18
3612	I18
3613	I19
3614	H19
3615	H19
3616	I19
3617	I20
3700	F 5
3701	F 3
3706	C 8
3707	B 8
3708	B 7
3710	E 2
3711	C 2
3713	B 4
3714	B 3
3715	C 3
3716	C 2
3717	C 2
3718	C 1
3719	F 7
3720	F 7
3721	F 7
3722	B 7
3723	B 8
3724	B 8
6103	K 5
6550	G 4
7000	D16
7040	I 2
7041	I 2
7042	H 3
7043	H 4
7044	H 5
7060	I19
7060	G19
7080	F19
7080	A20
7101	G11
7102	I12
7140	N 6
7141	N 6
7300	L17
7300	K19
7301	M17
7301	N19
7500	N 3
7550	G 4
7660	O 8
7660	C20
7700	C 7
9055	M 5


0V
10us/DIV
44,4us
play mode
stand by +5V
service mode SERVO xx
5V
0V
FM not moving
0.5us/DIV
service mode FOCUS
0V
FM is moving
service mode MOTOR
5V
0V
no tracking control
0.5us/DIV
service mode RADIAL
5V
0V
tracking control
service mode SLEDGE
5V
0V
sledge not moving
0.5us/DIV
5V
0V
sledge out
5V
0V
sledge in
eyepattern
2.5V
0.5us/DIV
SERVICE POSITION SLEDGE FOCUS MOTOR 0V
SERVICE POSITION RADIAL 0V
play mode
10ms/DIV
asynchronous uP dependent
QRA
10 X 8 bits
QCL
0.2ms/DIV
QDA
continue data
SERVICE POSITION SLEDGE
0V REST POSITION
+5V WHEN SLEDGE IS MOVING
+5V REST POSITION OF TRAY
0V WHEN OPENING OR CLOSING
ACTIVITY DURING PLAY
ACTIVITY DURING PLAY
SERVICE POSITION SLEDGE
SL OUT +2.6V
SL IN +2.5V

CD COMPONENT AND TRACK SIDE LAYOUT

CD MINI BRICK

1002	D10	2009	E10	2050	G10	2103	I4	2140	C10	2550	C6	3011	E10	3051	I9	3072	I7	3111	F5	3305	D3	3328	C5	3707	C9	4002	H10	7042	I10	9004	E5	9022	D8	9041	H6
1020	F6	2010	F12	2051	G10	2104	I3	2141	D9	2610	F7	3012	E12	3052	I9	3073	F9	3112	E4	3306	C3	3501	C2	3708	C10	4003	I12	7043	I9	9005	B5	9023	E8	9043	I5
1021	H5	2011	D10	2052	H9	2105	E3	2300	D4	2611	F6	3013	D12	3053	H9	3074	G7	3117	F4	3307	D5	3502	B3	3710	C7	4004	I9	7044	H9	9006	B6	9024	E9	9044	I4
1052	F9	2012	C12	2060	C12	2106	F3	2301	D4	2612	B8	3014	F7	3054	H9	3075	I6	3118	G5	3308	D5	3550	D6	3711	C8	4104	F5	7060	E7	9007	B6	9025	B10	9045	G6
1070	B12	2015	F7	2061	B11	2107	E4	2302	D3	2702	B6	3015	D10	3055	G9	3080	E11	3119	E6	3309	D5	3551	D6	3713	C8	4105	C11	7080	H8	9008	B6	9026	C10	9046	F6
1071	B8	2016	E12	2064	D12	2108	F3	2303	D3	2703	B7	3016	I5	3056	G10	3081	H7	3140	E12	3310	D5	3552	C7	3714	C7	4106	F2	7101	I3	9009	B6	9027	C10	9047	F6
1300	B4	2018	E12	2065	C12	2109	E4	2304	C6	2704	C9	3017	F10	3057	G10	3082	G7	3141	D11	3311	D5	3553	C5	3715	C8	4107	F3	7102	G3	9010	F3	9028	C11	9048	E7
1500	B3	2019	B12	2066	C10	2110	F3	2306	D3	3000	F11	3040	H8	3058	H9	3085	I6	3142	D9	3312	C4	3610	F7	3716	C7	4108	F4	7140	D9	9011	F4	9029	B11	9049	D8
1570	H4	2040	H9	2070	D10	2111	E3	2309	D5	3001	F11	3041	I11	3060	D11	3086	E9	3143	C10	3313	C5	3611	D7	3717	C8	4109	I4	7141	D9	9012	E5	9031	D11	9050	C5
1700	B7	2041	H10	2071	F8	2112	G2	2310	D5	3002	F11	3042	H10	3061	D12	3087	H7	3144	E8	3314	C4	3612	F7	3718	C7	4200	I5	7300	D3	9013	E6	9032	E11	9051	E2
2000	G10	2042	H10	2072	H7	2116	I4	2311	C5	3003	F11	3043	H10	3062	D12	3100	E4	3146	E6	3315	C5	3613	G7	3719	C8	4302	C4	7301	D5	9014	D6	9033	E12	9052	F2
2001	F10	2043	I9	2080	G8	2117	F4	2312	C4	3004	F10	3044	I10	3063	D12	3101	F3	3147	D9	3320	D4	3614	E7	3720	C9	4600	F7	7500	C3	9015	D6	9034	E12	9053	D5
2003	F11	2044	I10	2082	I7	2118	G5	2313	B4	3005	F10	3045	I10	3064	C10	3102	E4	3148	D9	3321	D4	3615	F6	3721	C9	4701	C9	7550	D7	9016	D6	9035	E11	9054	D11
2004	F11	2045	G9	2084	H7	2119	F4	2500	C2	3006	E8	3046	I11	3065	B12	3103	E4	3300	E4	3322	D4	3616	E6	3722	C7	6103	E3	7660	C11	9017	E6	9036	G10	9055	D3
2005	F11	2046	G9	2085	F9	2120	F4	2501	D3	3007	E12	3047	I10	3066	B10	3105	I5	3301	D4	3323	C4	3617	B8	3723	C8	6550	B6	7700	C8	9018	D7	9037	G10	9056	D4
2006	F10	2047	G10	2086	D10	2121	F4	2502	C2	3008	F12	3048	I10	3067	B10	3106	E5	3302	E4	3325	C5	3700	C7	3724	C8	7000	E11	9000	C2	9019	D7	9038	I8	9057	E4
2007	G10	2048	G10	2101	E3	2122	G4	2503	B2	3009	E10	3049	H10	3070	H7	3109	E3	3303	E3	3326	D5	3701	C6	4000	B12	7040	I11	9001	C3	9020	D8	9039	I7		
2008	F10	2049	G9	2102	E3	2123	F4	2504	C2	3010	F9	3050	I9	3071	E11	3110	H5	3304	E3	3327	C5	3706	C9	4001	G6	7041	I11	9003	D5	9021	D8	9040	H6		



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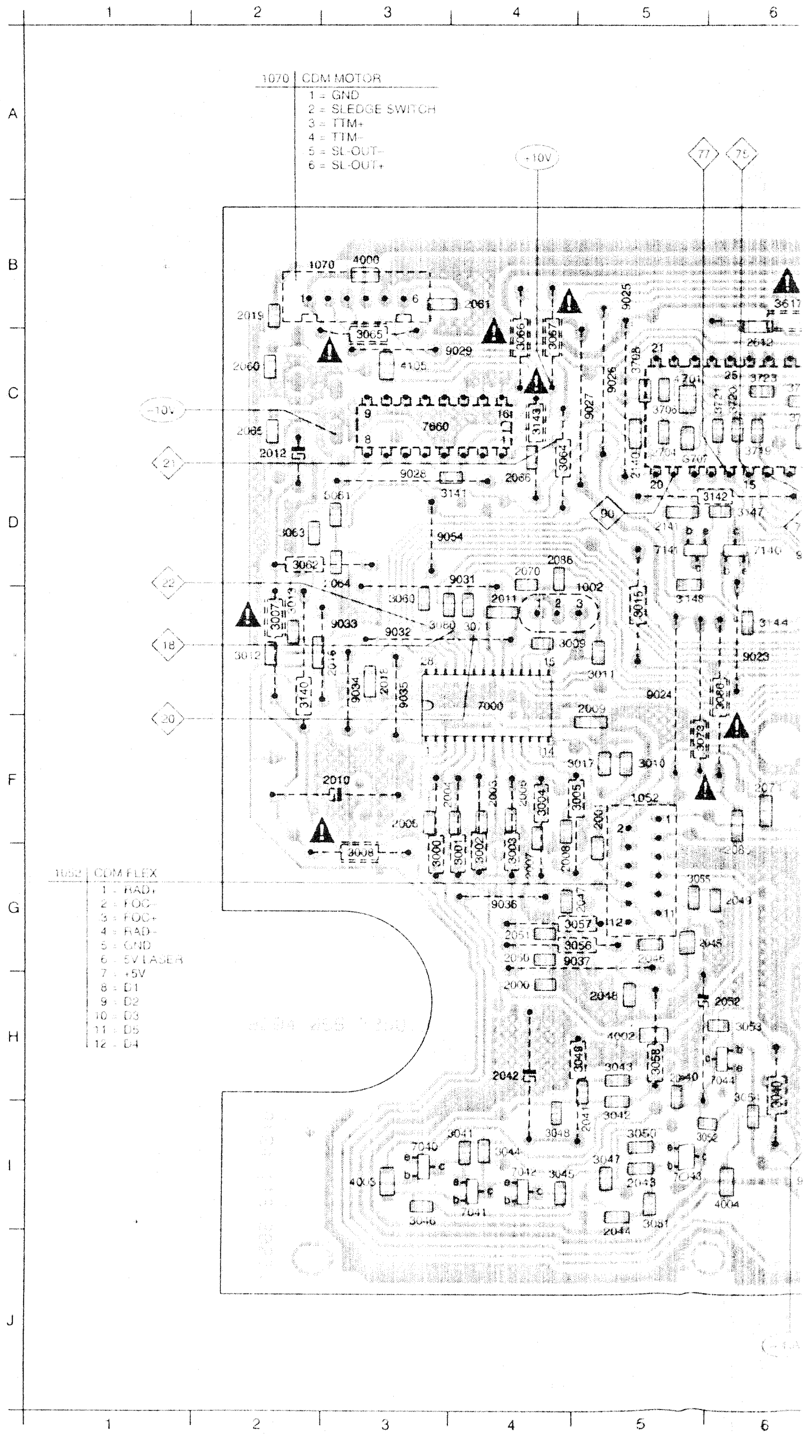
1021	I9	2010	F3	2050	G4	2102	F12	2122	G10	2502	C12	3007	E2	3046	I3	3064	
1052	F5	2011	E4	2051	G4	2103	J11	2123	G10	2503	B12	3008	G3	3047	I5	3065	
1070	B2	2012	C2	2052	H6	2104	I11	2140	D5	2504	D12	3009	E4	3048	I4	3066	
1071	B7	2015	F7	2060	C2	2105	F11	2141	D5	2550	D8	3010	F5	3049	H5	3067	
1300	B10	2016	E3	2061	B4	2106	F11	2300	E10	2610	F8	3011	E5	3050	I5	3070	
1500	B11	2018	E3	2064	E3	2107	F11	2301	E10	2611	F8	3012	E2	3051	I5	3071	
1570	H10	2019	B2	2065	C2	2108	F11	2302	D11	2612	C6	3013	E2	3052	I5	3072	
1700	B7	2040	H5	2066	D4	2109	E10	2303	E11	2702	B8	3014	F7	3053	H6	3073	
2000	H4	2041	I5	2070	D4	2110	G12	2304	D9	2703	B8	3015	E5	3054	H6	3074	
2001	F5	2042	H4	2071	F6	2111	E11	2306	D11	2704	C5	3016	I9	3055	G5	3075	
2003	F4	2043	I5	2072	H7	2112	G12	2309	D10	3000	G3	3017	F4	3056	G4	3080	
2004	F4	2044	J5	2080	G6	2116	I10	2310	D9	3001	G4	3040	I6	3057	G4	3081	
2005	F3	2045	G5	2082	I7	2117	F10	2311	C9	3002	G4	3041	I3	3058	H5	3082	
2006	F4	2046	G5	2084	H7	2118	G9	2312	C11	3003	G4	3042	I5	3060	E3	3085	
2007	G4	2047	G5	2085	G6	2119	F10	2313	C10	3004	F4	3043	H5	3061	D3	3086	



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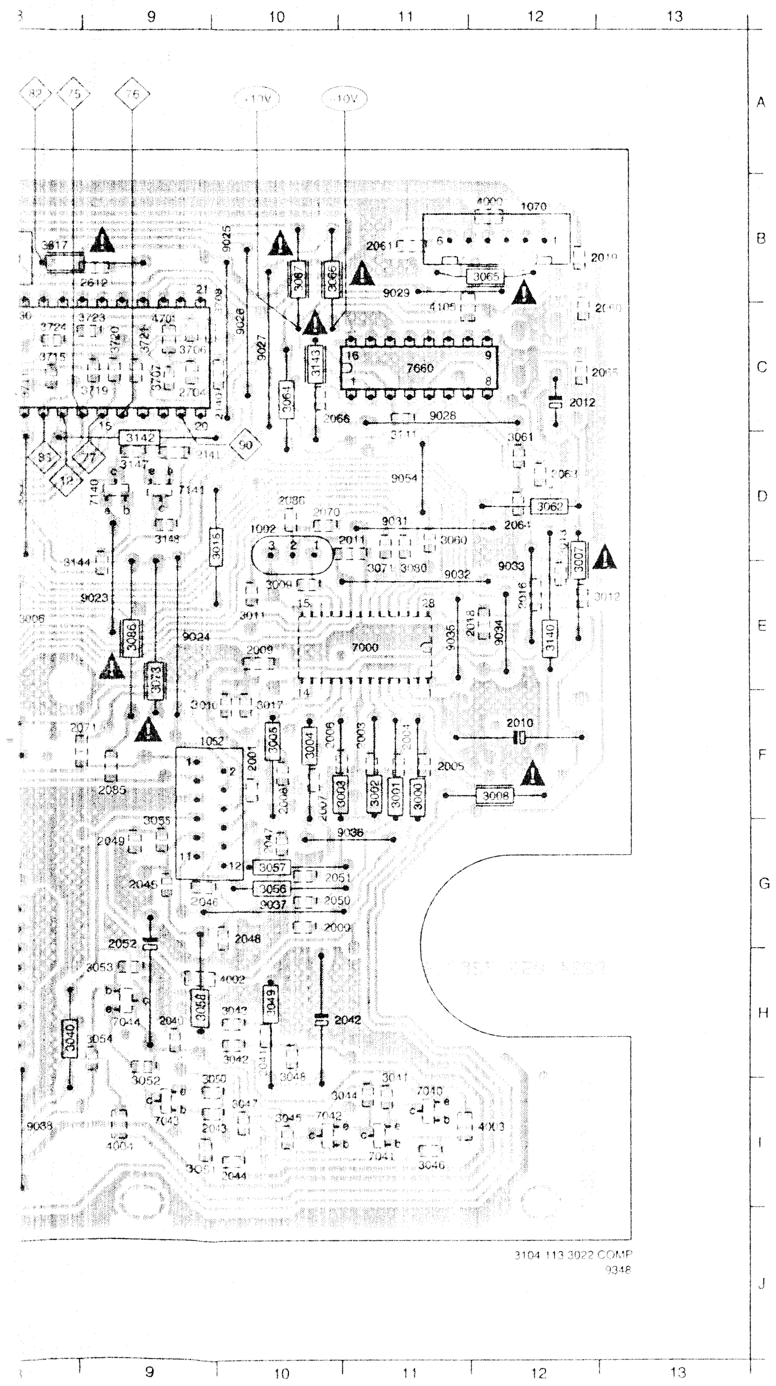
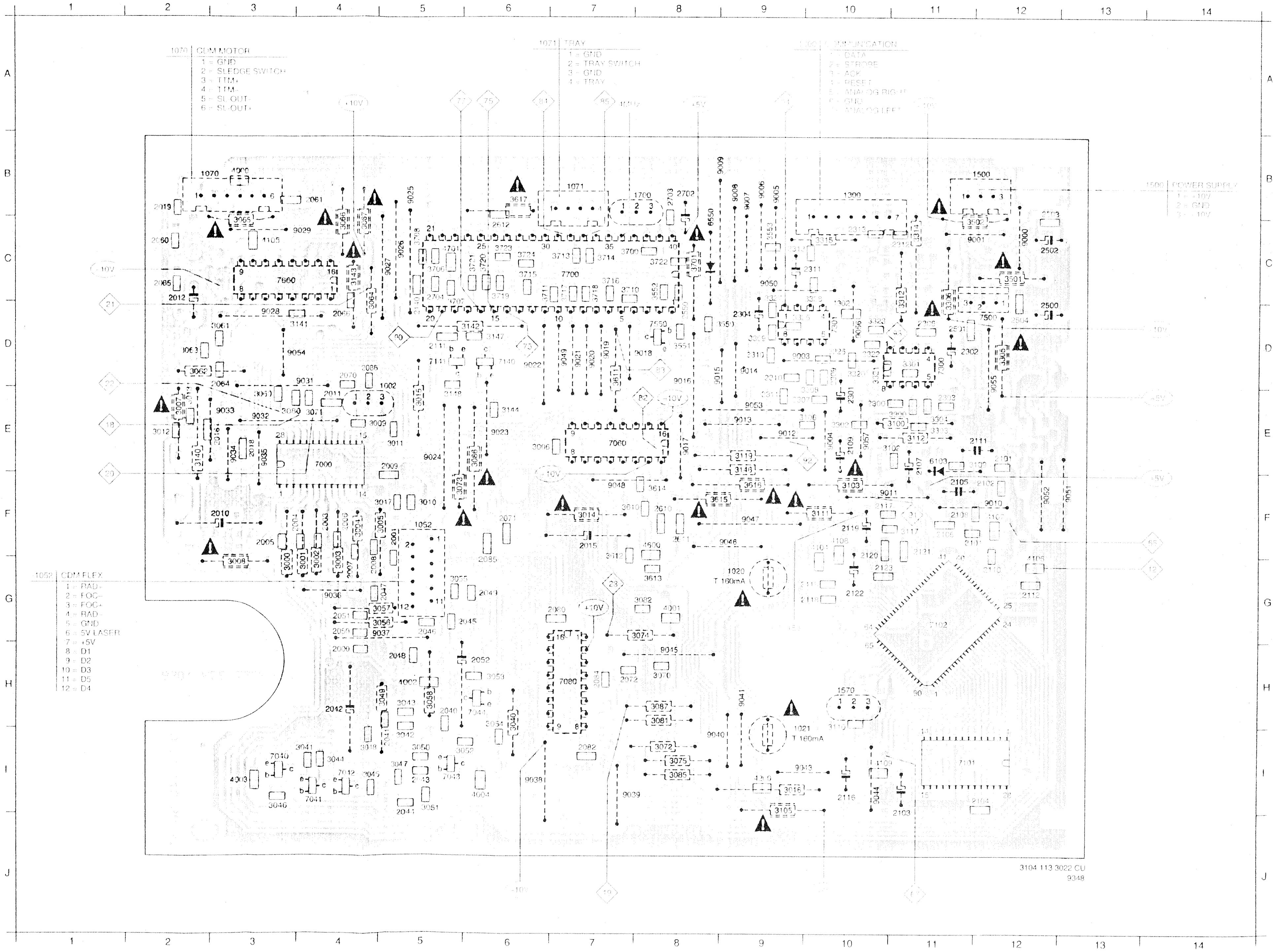
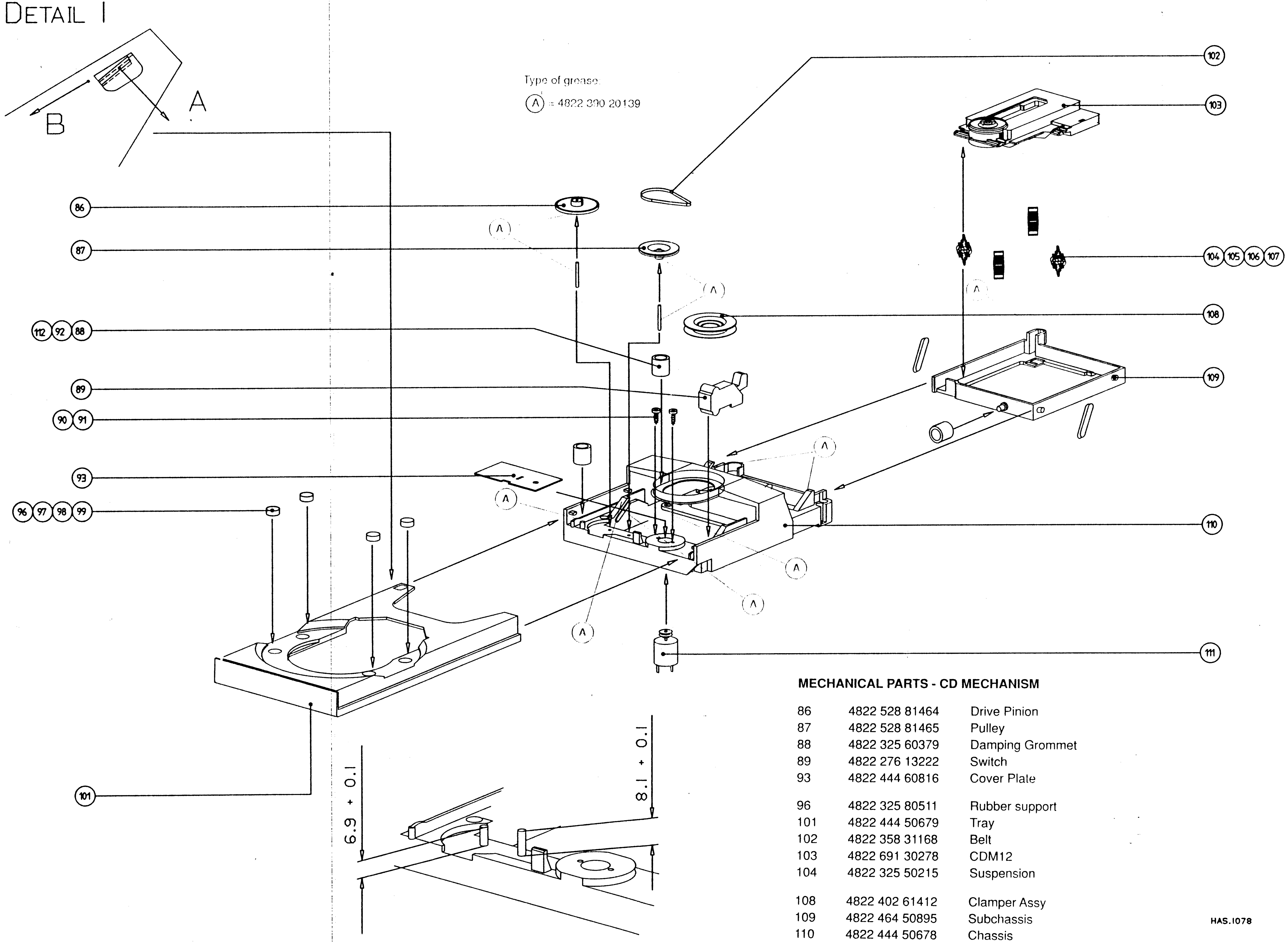
3501	C2	3708	C10	4003	I12	7043	I9	9005	B5	9023	E8	9043	I5
3502	B3	3710	C7	4004	I9	7044	H9	9006	B6	9024	E9	9044	I4
3550	D6	3711	C8	4104	F5	7060	E7	9007	B6	9025	B10	9045	G6
3551	D6	3713	C8	4105	C11	7080	H8	9008	B6	9026	C10	9046	F6
3552	C7	3714	C7	4106	F2	7101	I3	9009	B6	9027	C10	9047	F6
3553	C5	3715	C8	4107	F3	7102	G3	9010	F3	9028	C11	9048	E7
3610	F7	3716	C7	4108	F4	7140	D9	9011	F4	9029	B11	9049	D8
3611	D7	3717	C8	4109	I4	7141	D9	9012	E5	9031	D11	9050	C5
3612	F7	3718	C7	4200	I5	7300	D3	9013	E6	9032	E11	9051	E2
3613	G7	3719	C8	4302	C4	7301	D5	9014	D6	9033	E12	9052	F2
3614	E7	3720	C9	4600	F7	7500	C3	9015	D6	9034	E12	9053	D5
3615	F6	3721	C9	4701	C9	7550	D7	9016	D6	9035	E11	9054	D11
3616	E6	3722	C7	6103	E3	7660	C11	9017	E6	9036	G10	9055	D3
3617	B8	3723	C8	6550	B6	7700	C8	9018	D7	9037	G10	9056	D4
3700	C7	3724	C8	7000	E11	9000	C2	9019	D7	9038	I8	9057	E4
3701	C6	4000	B12	7040	I11	9001	C3	9020	D8	9039	I7		
3706	C9	4001	G6	7041	I11	9003	D5	9021	D8	9040	H6		



1002	E5	2008	G4	2048	H5	2086	D4	2120	F10	2500	D12	3005	F5	3044	I4	3062	D2	3087	H8	3143	C4	3312	D11	3553	C9	3714	C7	4105	C3	7060	E7	9006	B9	9023	E6	9041	H9
1020	G9	2009	E5	2049	G6	2101	E12	2121	F11	2501	D11	3006	E6	3045	I4	3063	D2	3100	E10	3144	E6	3313	C9	3610	F7	3715	C6	4106	G12	7080	H7	9007	B9	9024	E5	9043	I9
1021	I9	2010	F3	2050	G4	2102	F12	2122	G10	2502	C12	3007	E2	3046	I3	3064	D4	3101	F11	3146	F9	3314	C11	3611	D7	3716	C7	4107	F12	7101	I11	9008	B9	9025	B5	9044	I10
1052	F5	2011	E4	2051	G4	2103	J11	2123	G10	2503	B12	3008	G3	3047	I5	3065	C3	3102	E10	3147	D6	3315	C10	3612	G7	3717	D7	4108	F10	7102	G11	9009	B9	9026	C5	9045	H8
1070	B2	2012	C2	2052	H6	2104	I11	2140	D5	2504	D12	3009	E4	3048	I4	3066	C4	3103	F10	3148	E5	3320	D10	3613	G8	3718	D7	4109	I10	7140	D6	9010	F12	9027	C5	9046	F8
1071	B7	2015	F7	2060	C2	2105	F11	2141	D5	2550	D8	3010	F5	3049	H5	3067	C4	3105	I9	3300	E10	3321	D10	3614	F8	3719	C6	4200	I9	7141	D5	9011	F10	9028	D3	9047	F9
1300	B10	2016	E3	2061	B4	2106	F11	2300	E10	2610	F8	3011	E5	3050	I5	3070	H8	3106	E9	3301	D11	3322	D10	3615	F8	3720	C6	4302	D10	7300	D11	9012	E9	9029	C3	9048	F7
1500	B11	2018	E3	2064	E3	2107	F11	2301	E10	2611	F8	3012	E2	3051	I5	3071	E4	3109	E11	3302	E10	3323	D10	3616	F9	3721	C6	4600	F8	7301	D10	9013	E9	9031	D3	9049	D7
1570	H10	2019	B2	2065	C2	2108	F11	2302	D11	2612	C6	3013	E2	3052	I5	3072	I8	3110	I10	3303	E11	3325	D9	3617	B6	3722	C8	4701	C5	7500	D12	9014	D9	9032	E3	9050	C9
1700	B7	2040	H5	2066	D4	2109	E10	2303	E11	2702	B8	3014	F7	3053	H6	3073	F5	3111	F10	3304	E11	3326	D10	3700	C7	3723	C6	6103	E11	7550	D8	9015	D8	9033	E3	9051	F13
2000	H4	2041	I5	2070	D4	2110	G12	2304	D9	2703	B8	3015	E5	3054	H6	3074	G7	3112	E11	3305	D12	3327	C9	3701	C8	3724	C6	6550	C8	7660	C3	9016	D8	9034	E3	9052	F12
2001	F5	2042	H4	2071	F6	2111	E11	2306	D11	2704	C5	3016	I9	3055	G5	3075	I8	3117	F11	3306	D11	3328	C9	3706	C5	4000	B3	7000	E4	7700	C7	9017	E8	9035	E3	9053	E9
2003	F4	2043	I5	2072	H7	2112	G12	2309	D10	3000	G3	3017	F4	3056	G4	3080	E3	3118	G9	3307	E9	3501	C12	3707	D5	4001	G8	7040	I3	9000	C12	9018	D7	9036	G4	9054	D3
2004	F4	2044	J5	2080	G6	2116	I10	2310	D9	3001	G4	3040	I6	3057	G4	3081	H8	3119	E9	3308	E9	3502	C11	3708	C5	4002	H5	7041	I4	9001	C11	9019	D7	9037	G4	9055	E12
2005	F3	2045	G5	2082	I7	2117	F10	2311	C9	3002	G4	3041	I3	3058	H5	3082	G8	3140	E2	3309	D9	3550	D8	3710	C7	4003	I3	7042	I4	9003	D9	9020	D7	9038	I6	9056	D10
2006	F4	2046	G5	2084	H7	2118	G9	2312	C11	3003	G4	3042	I5	3060	E3	3085	I8	3141	D3	3310	D9	3551	D8	3711	C6	4004	I6	7043	I5	9004	E10	9021	D7	9039	I7	9057	E10
2007	G4	2047	G5	2085	G6	2119	F10	2313	C10	3004	F4	3043	H5	3061	D3	3086	E6	3142	D5	3311	E9	3552	C8	3713	C7	4104	F10	7044	H6	9005	B9	9022	D6	9040	I8		



CD EXPLODED VIEW MINI BRICK


DETAIL I
A
B
86
87
112 92 88
89
90 91
93
96 97 98 99
101
102
103
104 105 106 107
108
109
110
111
A
6.9 + 0.1
8.1 + 0.1
HAS.1078

Type of grease:

(A) = 4822 390 20139

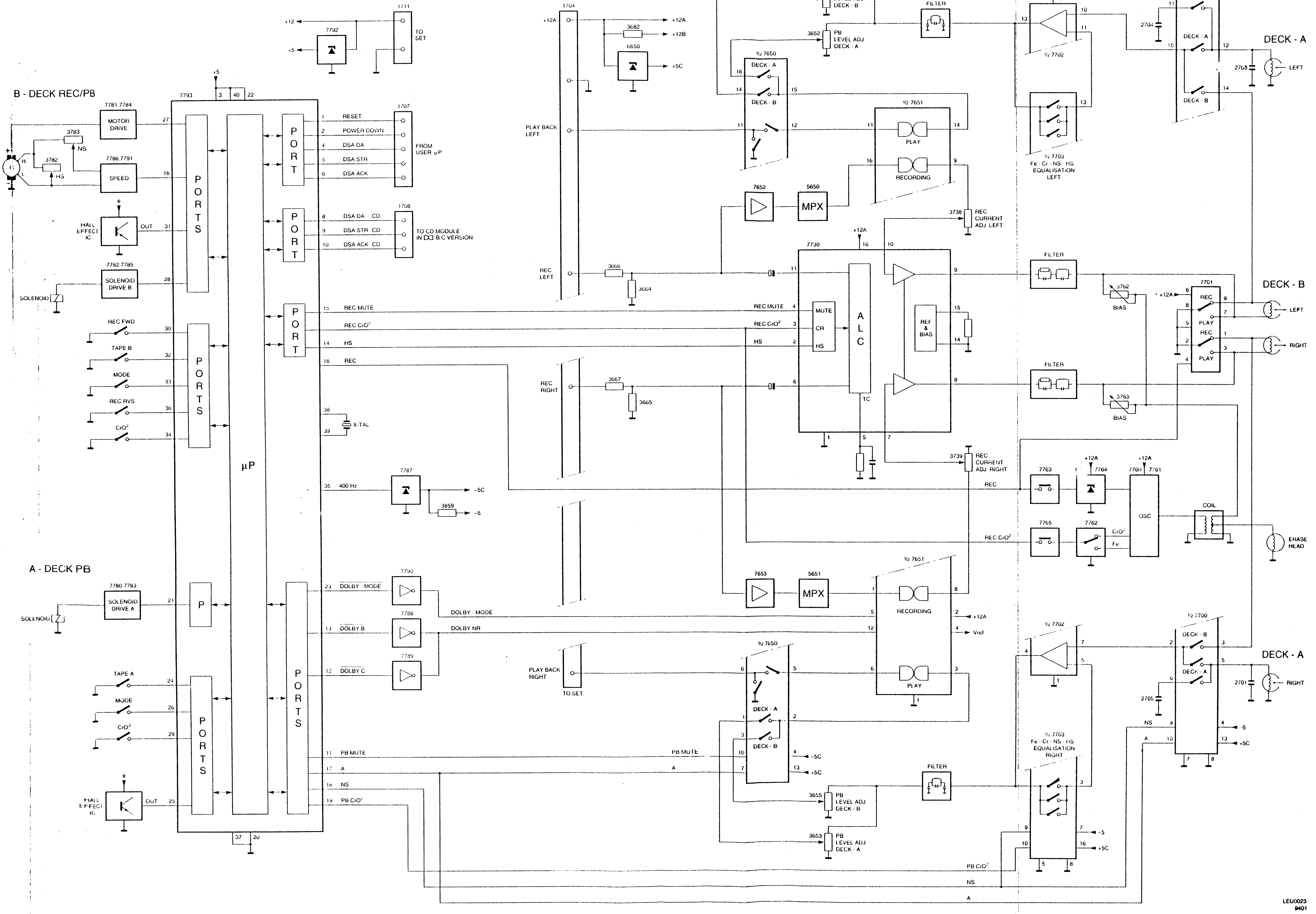
MECHANICAL PARTS - CD MECHANISM

86	4822 528 81464	Drive Pinion
87	4822 528 81465	Pulley
88	4822 325 60379	Damping Grommet
89	4822 276 13222	Switch
93	4822 444 60816	Cover Plate
96	4822 325 80511	Rubber support
101	4822 444 50679	Tray
102	4822 358 31168	Belt
103	4822 691 30278	CDM12
104	4822 325 50215	Suspension
108	4822 402 61412	Clamper Assy
109	4822 464 50895	Subchassis
110	4822 444 50678	Chassis
111	4822 361 21492	Motor

Note: Only the parts mentioned in this list are normal service spare parts.

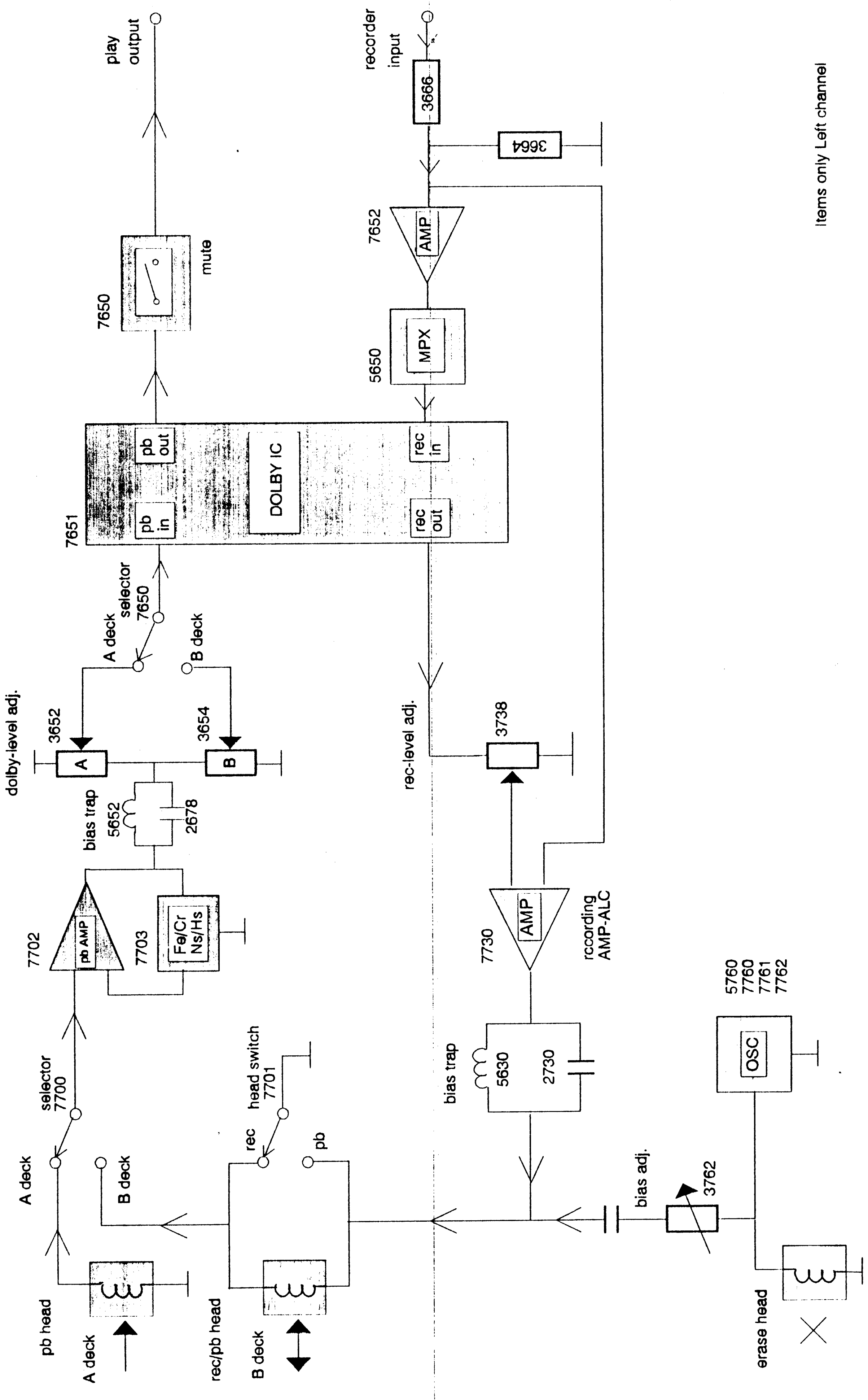
TAPE DECK

BLOCKDIAGRAM DOLBY B/C


B - DECK REC/PB
7781.7784
MOTOR DRIVE
3783
NS
3782
HS
7786.7791
SPEED
HALL EFFECT IC
OUT
7782.7785
SOLENOID DRIVE B
SOLENOID
REC FWD
TAPE B
MODE
REC RVS
CrO²
A - DECK PB
7780.7783
SOLENOID DRIVE A
TAPE A
+12
+5
7792
1711
TO SET
7793
PORTS
PORT
μP
P
1707
RESET
POWER DOWN
DSA DA
DSA STR
DSA ACK
FROM USER μP
1708
DSA DA CD
DSA STR CD
DSA ACK CD
TO CD MODULE IN DD B/C VERSION
REC MUTE
REC CrO²
HS
REC
X-TAL
400 Hz
7787
-5C
3859
-5
7790
DOLBY - MODE
7788
DOLBY B
7789
DOLBY C
DOLBY NR
PB MUTE
A
NS
PB CrO²
1704
+12A
3682
+12B
6650
+5C
PLAY BACK LEFT
REC LEFT
3666
3664
REC RIGHT
3667
3665
PLAY BACK RIGHT
TO SET
3654
PB LEVEL ADJ DECK - B
3652
PB LEVEL ADJ DECK - A
½ 7650
DECK - A
DECK - B
½ 7651
PLAY
RECORDING
7652
5650
MPX
3738
REC CURRENT ADJ LEFT
7730
MUTE
CR
ALC
TC
REF & BIAS
3739
REC CURRENT ADJ RIGHT
7653
5651
+12A
Vref
3655
3653
FILTER
½ 7702
½ 7703
Fe - Cr - NS - HS EQUALISATION LEFT
Fe - Cr - NS - HS EQUALISATION RIGHT
3762
3763
BIAS
7701
REC
PLAY
7763
7764
7760 7761
OSC
COIL
7765
7762
Fe
ERASE HEAD
½ 7730
½ 7700
2704
2703
2705
2701
DECK - A
DECK - B
LEFT
RIGHT
+5C
LEU0023
9401

PCS 69 376

FUNCTIONAL BLOCK DIAGRAM DOLBY B & DOLBY B/C **TAPE DECK**


play output
recorder input
3666
3664
7652
AMP
7650
mute
5650
MPX
7651
pb out
DOLBY IC
rec in
pb in
rec out
selector 7650
A deck
B deck
dolby-level adj.
3652
A
3654
B
bias trap
5652
2678
rec-level adj.
3738
7702
pb AMP
7703
Fe/Cr Ns/Hs
7730
AMP
rcording AMP-ALC
5760 7760 7761 7762
OSC
bias trap
5630
2730
selector 7700
head switch 7701
rec
pb
A deck
B deck
bias adj.
3762
pb head
A deck
rec/pb head
B deck
erase head

Items only Left channel

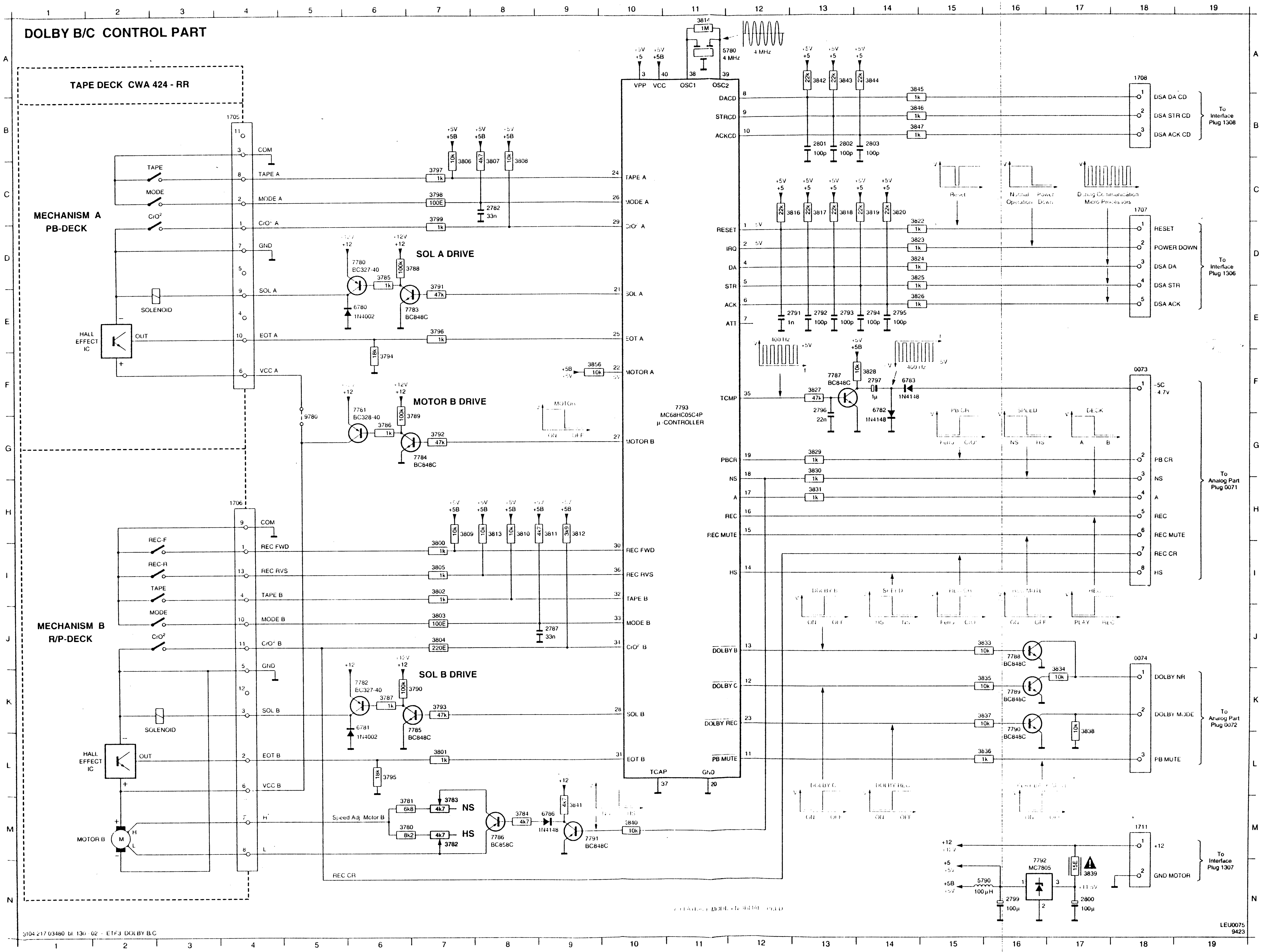
EXPLANATION OF THE ABBREVIATIONS **TAPE DECK**

A	Deck A or B
CRO2	Chrome
Dolby NR	Dolby Noise Reduction
Dolby Mode	Dolby Mode (Rec or Play)
DSA STR	DSA Strobe
DSA DA	DSA Date
DSA ACK	DSA Acknowledge
EOT A	End Of Tape A
EOT B	End Of Tape B
FE	Ferro
HS	High Speed
MODE B	Slide Deck B Up / Down
MODE A	Slide Deck A Up / Down
NC	Not Connect
NS	Normal Speed
PB CR	Playback Chrome
PB mute	Playback mute
PB Lever ADJ L	Playback Lever Adjustment Left
PB CR	Playback Chrome
PB mute	Playback mute
PB Lever ADJ R	Playback Lever Adjustment Right
PBL	Playback Left
PBR	Playback Right
Rec Mute	Recording Mute
Rec R	Recording Right
Rec L	Recording Left
Rec CR	Recording Chrome
REC RVS	Recording Reverce
REC	Recording
REC FWD	Recording Forward
SOL B	Solenoid B
SOL A	Solenoid A
VCC B	VCC Motor B

µProcessor 7793 pinning , values , In- Output Port

Pin	Discription	I/O PORT	Values	
1	Reset	I	Must be driven by external reset circuitry	
2	IRQ	I	0 = Power down	1 = normal operation
3	VPP	-	+5V	
4	Date	I/O	DSA bus data line	
5	Strobe	I/O	DSA bus clock line	
6	Acknowledge	I/O	DSA bus acknowledge line	
7	Attenuate	O	0 = Off	1 = On
8	DSA CD Data	I/O	DSA CD bus data line	
9	DSA CD Strobe	I/O	DSA Bus strobe line	
10	DSA CD Acknowledge	I/O	DSA CD bus Acknowledge line	
11	Playback Mute	O	0 = Playback mute On	
12	Dolby C	O	1 = Dolby C Off	0 = Dolby C On
13	Dolby B	O	1 = Dolby B Off	0 = Dolby B On
14	High Speed	O	0 = Normal speed	1 = High speed
15	Record Mute	O	1 = Record mute On	
16	Play / Record	O	0 = Play	1 = Record
17	Playback A/B	O	1 = Deck A	0 = Deck B
18	Normal Speed	O	0 = High speed	1 = Normal speed
19	Playback Fe/CrO2	O	0 = Ferro	1 = CrO2
20	GND	-	Ground	
21	Solenoid Deck A	O	Solenoid Deck A	
22	Motor deck A	O	Not used	
23	Dolby Record	O	0 = Record	1 = Play
24	Tape Detect Deck A	I	0 = Tape present in deck A	
25	Halle IC Deck A	I	4 Pulses per rotation of winding wheel	
26	Mode Deck A	I	0 = Slide up	1 = Slide down
27	Main Motor	O	Motor B	
28	Solenoid Deck B	O	Solenoid Deck B	
29	CrO2 Deck A	I	0 = Ferro Tape	1 = CrO2
30	Record Frontside Deck B	I	0 = Record enabled on frontside	
31	Hall IC Deck B	I	4 Pulses per rotation of winding wheel	
32	Tape Detect Deck B	I	0 = Tape present in deck B	
33	Mode Deck B	I	0 = Slide up	1 = Slide down
34	CrO2 Deck B	I	0 = Ferro Tape	1 = CrO2
35	TCMP	O	400 Hz oscillator	
36	Record Rearside Deck B	I	0 = Record enable on rearside	
37	TCAP	I	Not used	
38	OSC 1	-	4 MHz	
39	OSC 2	-	4 MHz	
40	VCC	-	+5V	

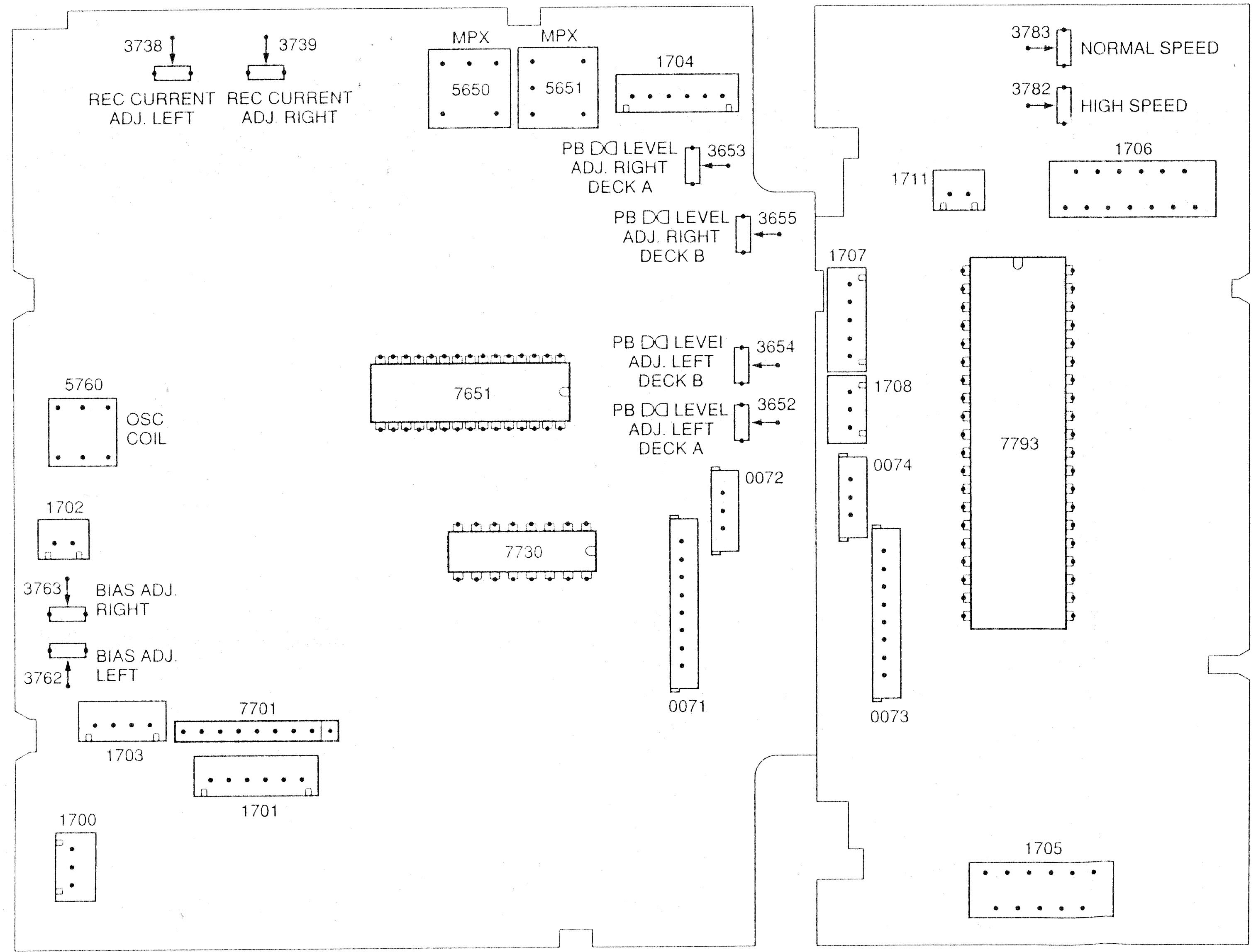
TAPE DECK


DOLBY B/C CONTROL PART
TAPE DECK CWA 424 - RR
MECHANISM A PB-DECK
MECHANISM B R/P-DECK
TAPE
MODE
CrO²
SOLENOID
HALL EFFECT IC
OUT
MOTOR B
1705
1706
COM
TAPE A
MODE A
CrO² A
GND
SOL A
EOT A
VCC A
REC FWD
REC RVS
TAPE B
MODE B
CrO² B
SOL B
EOT B
VCC B
REC CR
SOL A DRIVE
MOTOR B DRIVE
SOL B DRIVE
7780 BC327-40
7783 BC848C
7761 BC328-40
7784 BC848C
7782 BC327-40
7785 BC848C
7786 BC858C
7791 BC848C
6780 1N4002
6781 1N4002
6786 1N4148
Speed Adj. Motor B
NS
HS
7793 MC68HC05C4P µ-CONTROLLER
VPP
VCC
OSC1
OSC2
5780 4 MHz
4 MHz
DACD
STRCD
ACKCD
RESET
IRQ
DA
STR
ACK
ATT
TCMP
PBCR
NS
A
REC
REC MUTE
HS
DOLBY B
DOLBY C
DOLBY REC
PB MUTE
TCAP
GND
MOTOR A
MOTOR B
Reset
Normal Operation
Power Down
Dolby Communication Micro Processors
400 Hz
7787 BC848C
6782 1N4148
6783 1N4148
7788 BC848C
7789 BC848C
7790 BC848C
7792 MC7805
1708
DSA DA CD
DSA STR CD
DSA ACK CD
To Interface Plug 1308
1707
RESET
POWER DOWN
DSA DA
DSA STR
DSA ACK
To Interface Plug 1306
0073
PB CR
NS
A
REC
REC MUTE
REC CR
HS
To Analog Part Plug 0071
0074
DOLBY NR
DOLBY MODE
PB MUTE
To Analog Part Plug 0072
1711
+12
GND MOTOR
To Interface Plug 1307
Feno CrO²
ON OFF
PLAY REC
LEU0075 9423
3104 217 03480 bl 130 - 02 - ETF3 DOLBY B.C

0073	F18
0074	J18
1705	B4
1706	H4
1707	C18
1708	A18
1711	M18
2782	C8
2787	J9
2791	E12
2792	E13
2793	E13
2794	E14
2795	E14
2796	F13
2797	F14
2799	N16
2800	N17
2801	B13
2802	B13
2803	B14
3780	M6
3781	M6
3782	M7
3783	M7
3784	M8
3785	D6
3786	G6
3787	K6
3788	D6
3789	G6
3790	K6
3791	E7
3792	G7
3793	K7
3794	F6
3795	L6
3796	E7
3797	C7
3798	C7
3799	C7
3800	I7
3801	L7
3802	I7
3803	J7
3804	J7
3805	I7
3806	C7
3807	C8
3808	C8
3809	H7
3810	H8
3811	H9
3812	H9
3813	H8
3814	A11
3816	C12
3817	C13
3818	C13
3819	C14
3820	C14
3822	D14
3823	D14
3824	D14
3825	D14
3826	E14
3827	F13
3828	F14
3829	G13
3830	G13
3831	H13
3833	J15
3834	K17
3835	K15
3836	L15
3837	K15
3838	L17
3839	N17
3840	M10
3841	M9
3842	A13
3843	A13
3844	A14
3845	A14
3846	B14
3847	B14
3856	F9
5780	A11
5790	N15
6780	E6
6781	K6
6782	F14
6783	F14
6786	M8
7780	D6
7781	F6
7782	K6
7783	E6
7784	G7
7785	L6
7786	M9
7787	F13
7788	J16
7789	K16
7790	L16
7791	M9
7792	N16
7793	F11
9780	G5

TAPE DECK

Adjustment position Lay out


3738
3739
REC CURRENT ADJ. LEFT
REC CURRENT ADJ. RIGHT
MPX
MPX
5650
5651
1704
PB DD LEVEL ADJ. RIGHT DECK A
3653
PB DD LEVEL ADJ. RIGHT DECK B
3655
PB DD LEVEL ADJ. LEFT DECK B
3654
PB DD LEVEL ADJ. LEFT DECK A
3652
5760
OSC COIL
7651
7730
1702
3763
BIAS ADJ. RIGHT
BIAS ADJ. LEFT
3762
1703
7701
1701
1700
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0073
7793
1711
3783
NORMAL SPEED
3782
HIGH SPEED
1706
1705

ETF3 DOLBY B/C
3104 217 03480

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0071	F6	2658	E8	2679	I6	2710	G8	2743	F9	2782	F4	3655	D6	3678	C10	3710	H
0072	E6	2659	D8	2680	H6	2711	I7	2744	G8	2787	E4	3656	C7	3679	D9	3711	I7
0073	F5	2660	E7	2681	I6	2712	H8	2745	F8	2791	D4	3657	C6	3680	B9	3712	H
0074	F5	2661	D8	2682	C10	2713	I8	2746	C10	2792	D4	3658	E7	3681	D10	3713	I7
1700	H11	2662	E10	2683	D10	2714	H8	2747	C10	2793	D4	3659	D7	3682	E10	3714	H
1701	H10	2663	E10	2684	C10	2715	I8	2748	C10	2794	D4	3660	E7	3688	C8	3715	I7
1702	F11	2664	E10	2685	D10	2716	G10	2749	B9	2795	E4	3661	D7	3689	B8	3720	H
1703	G12	2665	D10	2686	C9	2717	H8	2750	G8	2796	G3	3662	B8	3694	B11	3721	I7
1704	B6	2666	E8	2687	D9	2718	H8	2751	G8	2797	G4	3663	B7	3695	B10	3722	G
1705	I4	2667	D8	2688	C9	2730	G11	2752	F8	2799	C4	3664	B7	3696	B11	3723	H
1706	D3	2668	F9	2692	C8	2731	F11	2753	F8	2800	D5	3665	B7	3697	C10	3724	H
1707	D5	2669	D9	2693	C8	2732	G10	2754	F7	2801	E4	3666	B6	3698	F7	3730	G
1708	E5	2670	E9	2700	H11	2733	F10	2755	E8	2802	E4	3667	B6	3700	I10	3731	F
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2652	D8	2673	F9	2704	I11	2737	F10	2761	F11	2811	G6	3671	D9	3704	H9	3735	C
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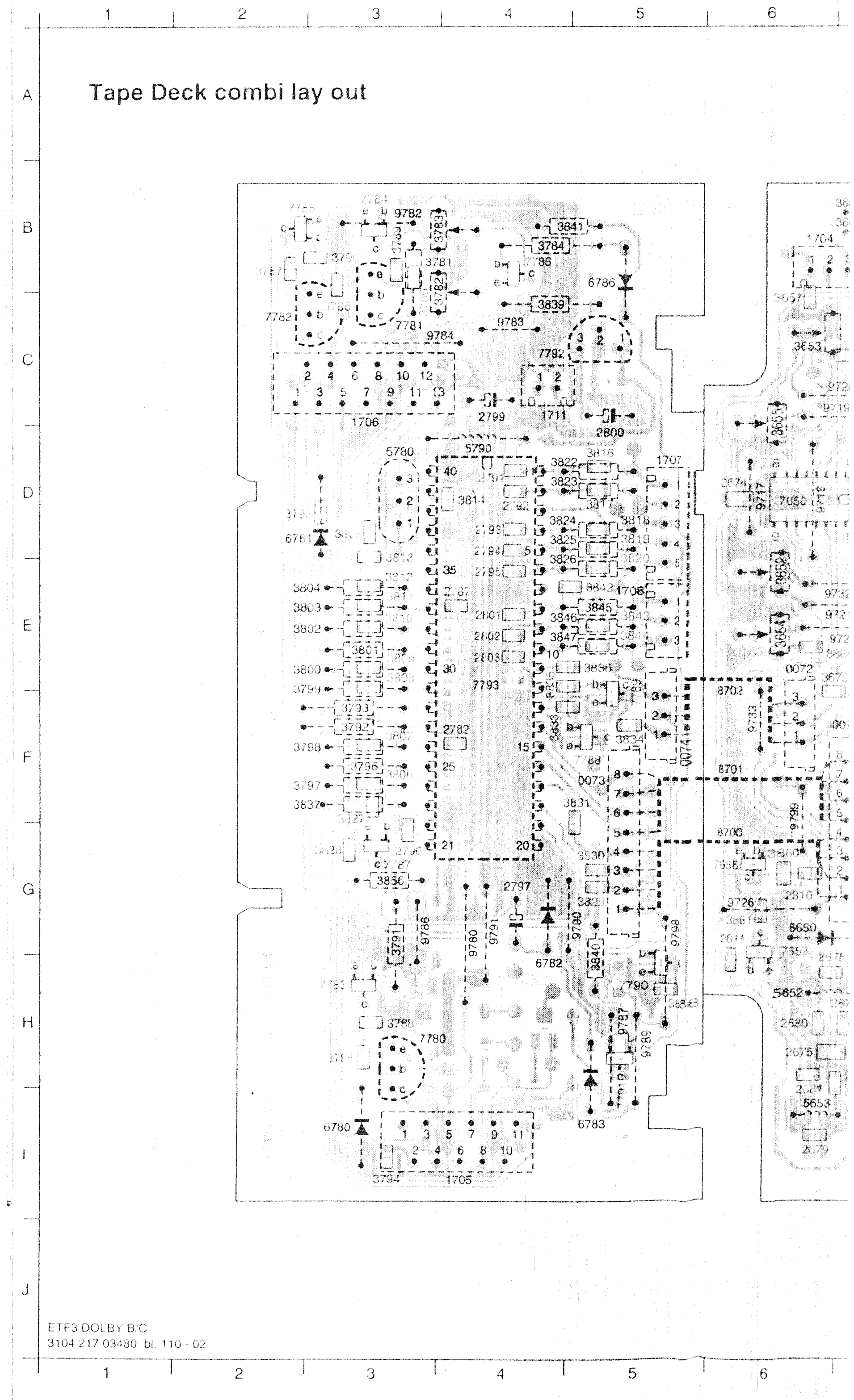
2655	B7	2676	H6	2707	I9	2740	G9	2765	E11	3652	E6	3675	E6	3707	I8	3738	B
2656	E8	2677	I7	2708	H8	2741	G9	2766	D11	3653	C6	3676	E7	3708	H7	3739	B
2657	D8	2678	H6	2709	I8	2742	G9	2768	E11	3654	E6	3677	E7	3709	I7	3740	C

Tape Deck combi lay out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8702
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5653
8650

ETF3 DOLBY B/C
3104 217 03480 bl. 110 - 02

0071	F6	2658	E8	2679	I6	2710	G8	2743	F9	2782	F4	3655	D6	3678	C10	3710	H7	3741	B10	3773	E10	3797	F2	3820	E5	3844	E5	6760	D11	7759	C11	8701	F6	9723	F10
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0073	F5	2660	E7	2681	I6	2712	H8	2745	F8	2791	D4	3657	C6	3680	B9	3712	H7	3743	B9	3775	C11	3799	F2	3823	D4	3846	E4	6781	D2	7761	D10	9700	I11	9726	G6
0074	F5	2661	D8	2682	C10	2713	I8	2746	C10	2792	D4	3658	E7	3681	D10	3713	I7	3744	G8	3776	C12	3800	E2	3824	D4	3847	E4	6782	H4	7762	C12	9701	I10	9727	F7
1700	H11	2662	E10	2683	D10	2714	H8	2747	C10	2793	D4	3659	D7	3682	E10	3714	H7	3745	G7	3777	C11	3801	E3	3825	D4	3856	G3	6783	I5	7763	D11	9703	G8	9728	G7
1701	H10	2663	E10	2684	C10	2715	I8	2748	C10	2794	D4	3660	E7	3688	C8	3715	I7	3746	F7	3780	C3	3802	E2	3826	E4	3858	H9	6784	G9	7764	D11	9704	H8	9729	E6
1702	F11	2664	E10	2685	D10	2716	G10	2749	B9	2795	E4	3661	D7	3689	B8	3720	H8	3747	F7	3781	B3	3803	E2	3827	G3	3859	I7	6786	B5	7765	C11	9705	H10	9730	D7
1703	G12	2665	D10	2686	C9	2717	H8	2750	G8	2796	G3	3662	B8	3694	B11	3721	I7	3748	E8	3782	C4	3804	E2	3828	G3	3860	G6	6787	C11	7780	H3	9706	H10	9731	E7
1704	B6	2666	E8	2687	D9	2718	H8	2751	G8	2797	G4	3663	B7	3695	B10	3722	G10	3749	F7	3783	B4	3805	D3	3829	G5	3861	G6	7650	D6	7781	C3	9707	H10	9732	E6
1705	I4	2667	D8	2688	C9	2730	G11	2752	F8	2799	C4	3664	B7	3696	B11	3723	H9	3760	G11	3784	B4	3806	F3	3830	G5	3864	E6	7651	E8	7782	C2	9708	H7	9733	F6
1706	D3	2668	F9	2692	C8	2731	F11	2753	F8	2800	D5	3665	B7	3697	C10	3724	H9	3761	H11	3785	H3	3807	F3	3831	F4	3865	C7	7652	B9	7783	H3	9709	C9	9780	H4
1707	D5	2669	D9	2693	C8	2732	G10	2754	F7	2801	E4	3666	B6	3698	F7	3730	G11	3762	G11	3786	C3	3808	E3	3833	F4	5650	B8	7653	C9	7784	B3	9710	C9	9782	B3
1708	E5	2670	E9	2700	H11	2733	F10	2755	E8	2802	E4	3667	B6	3700	I10	3731	F11	3763	G11	3787	B2	3809	E3	3834	F5	5651	B7	7654	B11	7785	B2	9711	C9	9783	C4
1711	C4	2671	D9	2701	I11	2734	G10	2756	E8	2803	E4	3668	E9	3701	I10	3732	F10	3764	E12	3788	H3	3810	E3	3835	F4	5652	H6	7655	B10	7786	B4	9712	D9	9784	C3
2650	E7	2672	E9	2702	H11	2735	F11	2757	F7	2808	G10	3669	E9	3702	H9	3733	F10	3765	D11	3789	B3	3811	E3	3836	E5	5653	I6	7656	G6	7787	G3	9715	D7	9786	G3
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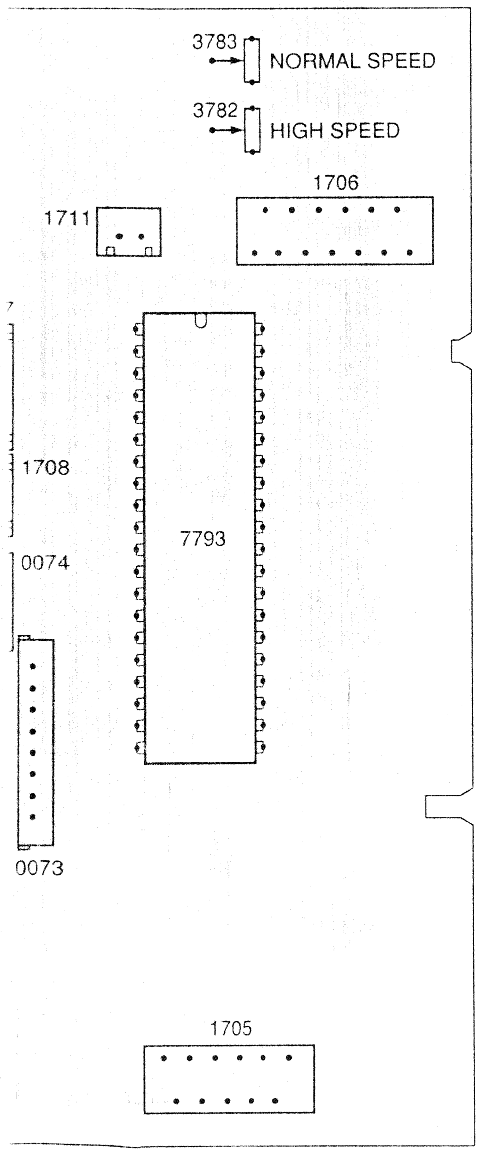
2654	C8	2675	H6	2706	H9	2739	F9	2764	E11	3651	D7	3674	E10	3706	H8	3737	D10	3769	B11	3793	F3	3816	D5	3840	H5	5770	E10	7702	H9	7791	I5	9719	C6	9791	G4
2655	B7	2676	H6	2707	I9	2740	G9	2765	E11	3652	E6	3675	E6	3707	I8	3738	B11	3770	C11	3794	I3	3817	D5	3841	B4	5780	D3	7703	H7	7792	C4	9720	C6	9798	G5
2656	E8	2677	I7	2708	H8	2741	G9	2766	D11	3653	C6	3676	E7	3708	H7	3739	B10	3771	D11	3795	D2	3818	D5	3842	E5	5790	D4	7730	F8	7793	E4	9721	E6	9799	G6
2657	D8	2678	H6	2709	I8	2742	G9	2768	E11	3654	E6	3677	E7	3709	I7	3740	C11	3772	C11	3796	F3	3819	D5	3843	E5	6650	G6	7758	D12	8700	G6	9722	G10	9800	C11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NORMAL SPEED
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HIGH SPEED
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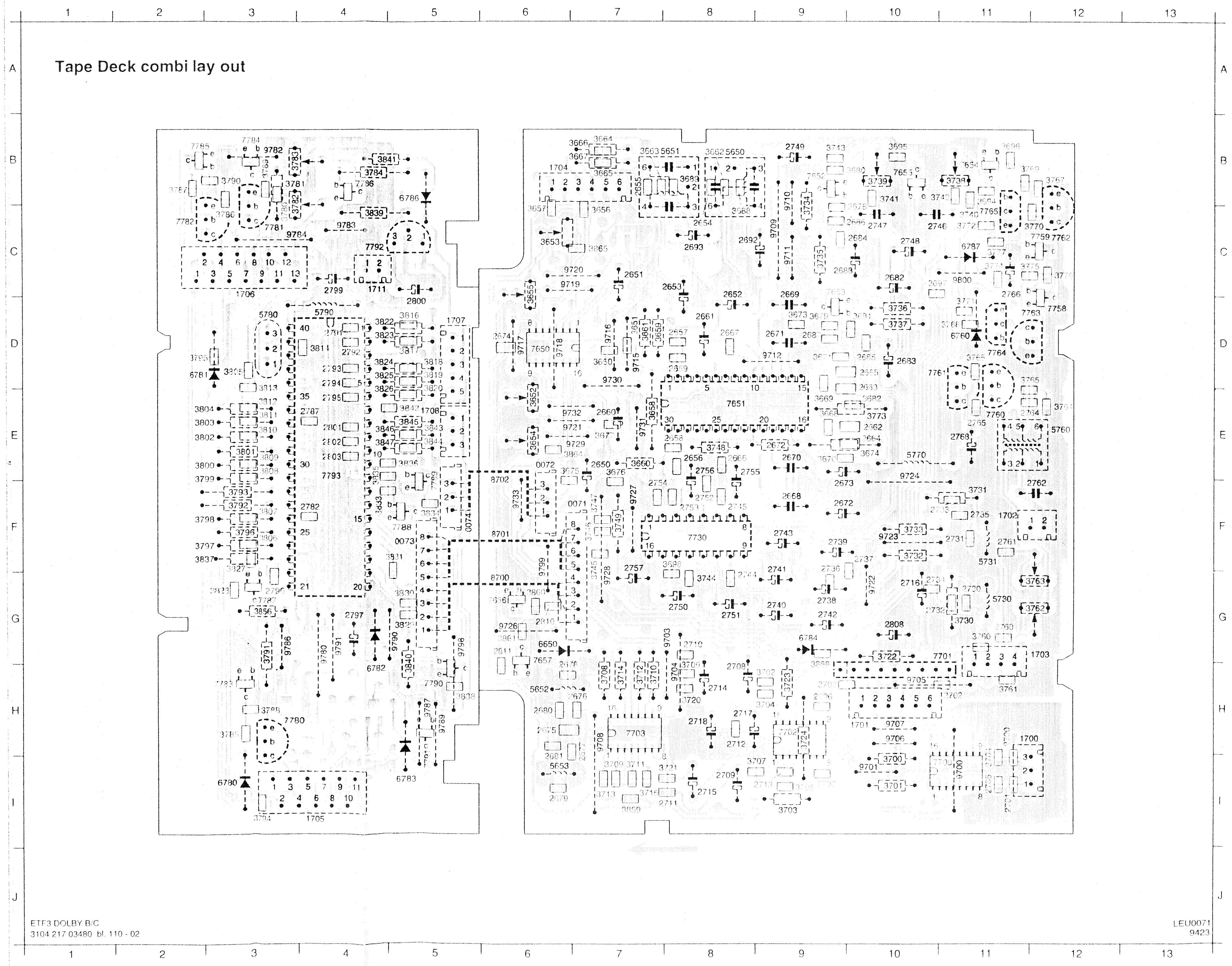
Tape Deck combi lay out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ETF3 DOLBY B/C
3104 217 03480 bl. 110 - 02

LEU0071
9423

PCS 69 379

0071	F7	1708	E9	2672	F4	2717	H6	2750	G6	3652	E8	3700	I4	3732	F4	3773	E4	3800	E11	3840	H9	5760	E3
0072	E8	1711	C10	2673	F4	2718	H6	2751	G6	3653	C8	3701	I4	3733	F4	3781	B11	3801	E11	3841	B9	5770	E4
0073	F9	2650	E7	2682	C4	2738	G5	2755	E5	3654	E8	3703	I5	3734	C5	3782	C11	3802	E11	3845	E9	5780	D11
0074	F9	2651	C7	2683	D4	2739	F4	2756	E6	3655	D8	3708	H7	3735	C5	3783	B11	3803	E11	3846	E9	5790	D10
1700	H2	2652	D6	2688	C4	2740	G5	2757	F7	3658	E7	3710	H7	3736	D4	3784	B10	3804	E11	3847	E9	6650	G8
1701	H4	2653	C6	2692	C5	2741	G5	2762	F2	3659	D7	3712	H7	3737	D4	3791	H11	3822	D9	3856	G11	6760	D3
1702	F3	2660	E7	2693	C6	2742	G5	2766	C2	3660	E7	3714	H7	3738	B3	3792	F11	3823	D9	5650	B6	6780	I11
1703	G2	2661	D6	2708	H6	2743	F5	2768	E3	3661	D7	3722	G4	3739	B4	3793	F11	3824	D9	5651	B6	6781	D11
1704	B7	2668	F5	2709	I6	2746	C3	2797	G10	3666	B7	3723	H5	3748	E6	3796	F11	3825	D9	5652	H7	6782	H10
1705	I10	2669	D5	2714	H6	2747	C4	2799	C10	3667	B7	3724	H5	3749	F7	3797	F11	3826	E9	5653	I8	6783	I9
1706	D11	2670	E5	2715	I6	2748	C4	2800	D9	3672	E5	3730	G3	3762	G2	3798	F11	3837	F11	5730	G3	6784	G5
1707	D9	2671	D5	2716	G4	2749	B5	2808	G4	3674	E4	3731	F3	3763	G2	3799	F11	3839	C10	5731	F3	6786	B9

6787	C3	7782	C12	9707	H4	9721	E7	9780	H10
7651	E6	7792	C10	9708	I7	9722	G4	9782	B11
7701	G3	7793	E10	9709	C5	9723	F4	9783	C10
7730	F6	8700	G8	9710	C5	9724	E4	9784	C11
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7761	D3	8702	F8	9712	D5	9727	F7	9787	H9
7762	C2	9700	I3	9715	D7	9728	G7	9789	H9
7763	D2	9701	I4	9716	D7	9729	E7	9790	G9
7764	D3	9703	G6	9717	D8	9730	D7	9791	G10
7765	C3	9704	H6	9718	D8	9731	E7	9798	H9
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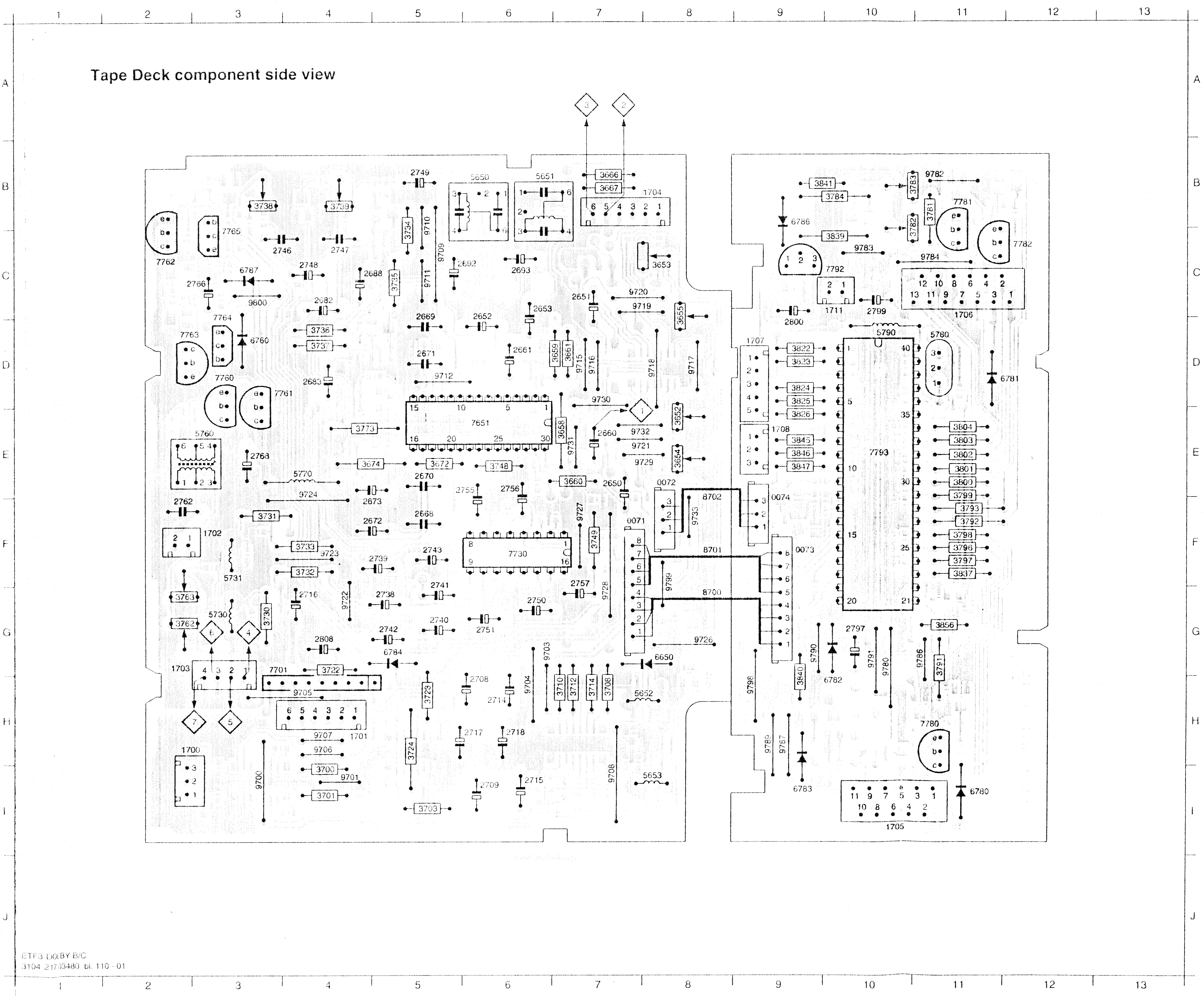
Tape Deck component side view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2665	D10	2684	C10	2707	I9	2736	G9	2782	F4	2810	G6	3669	E9	3682	E10
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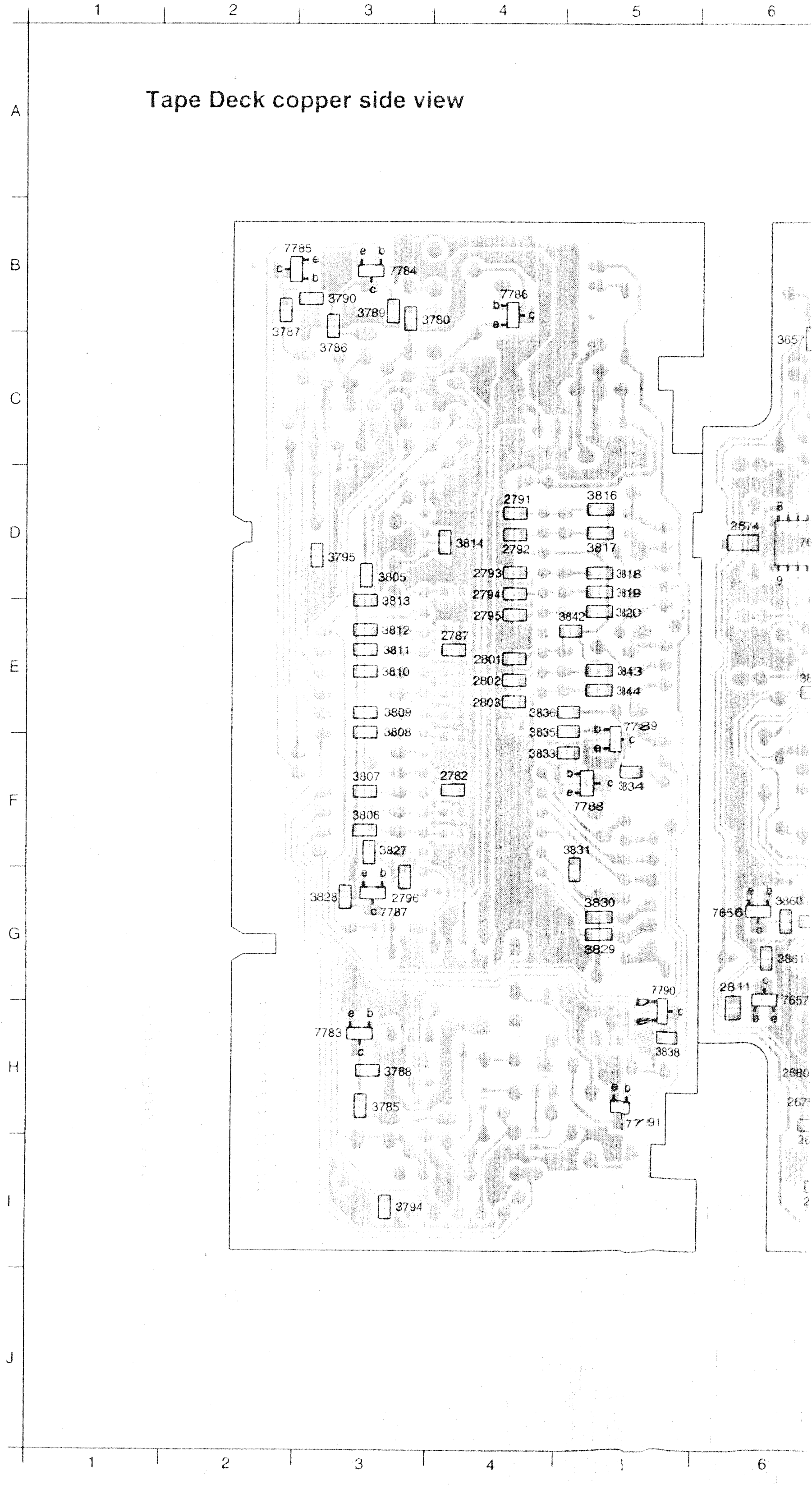
Tape Deck copper side view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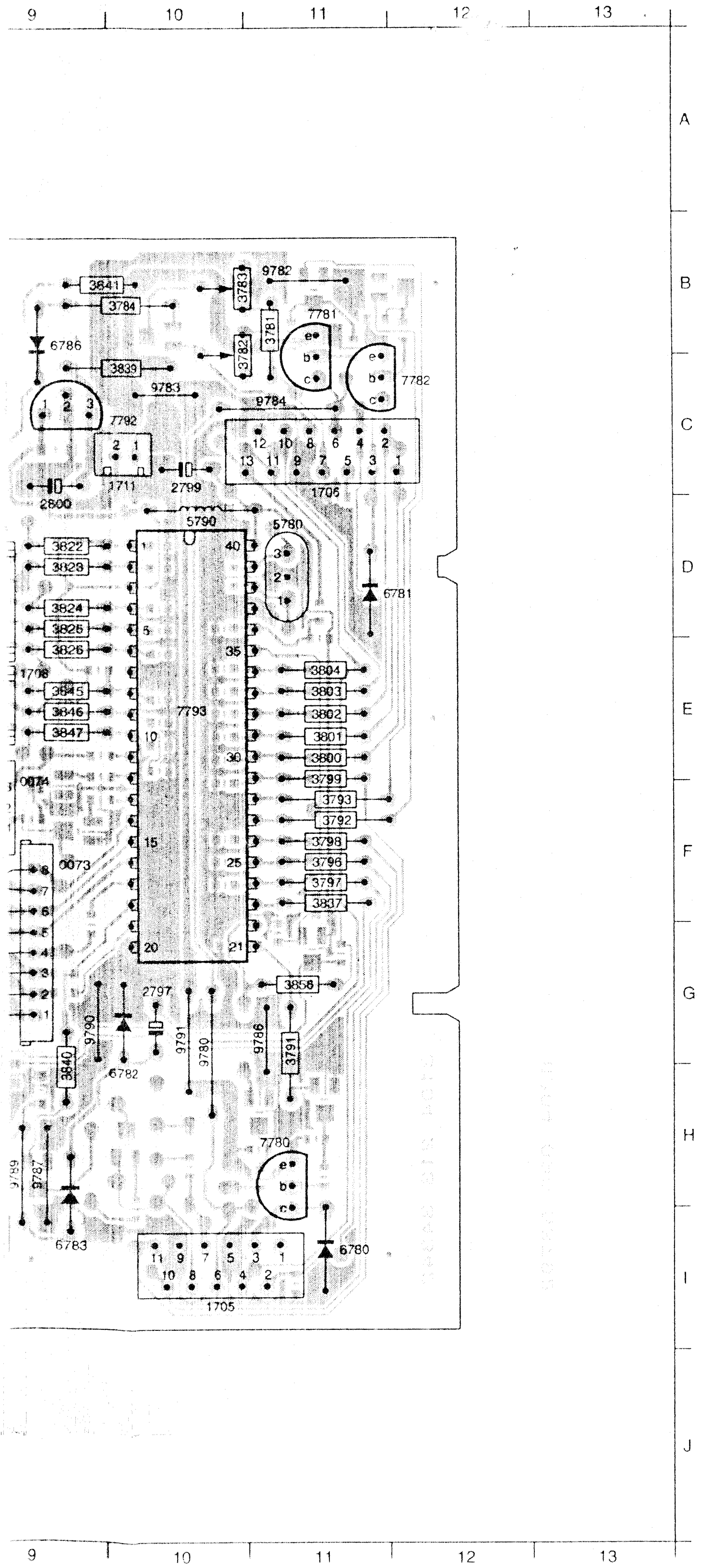
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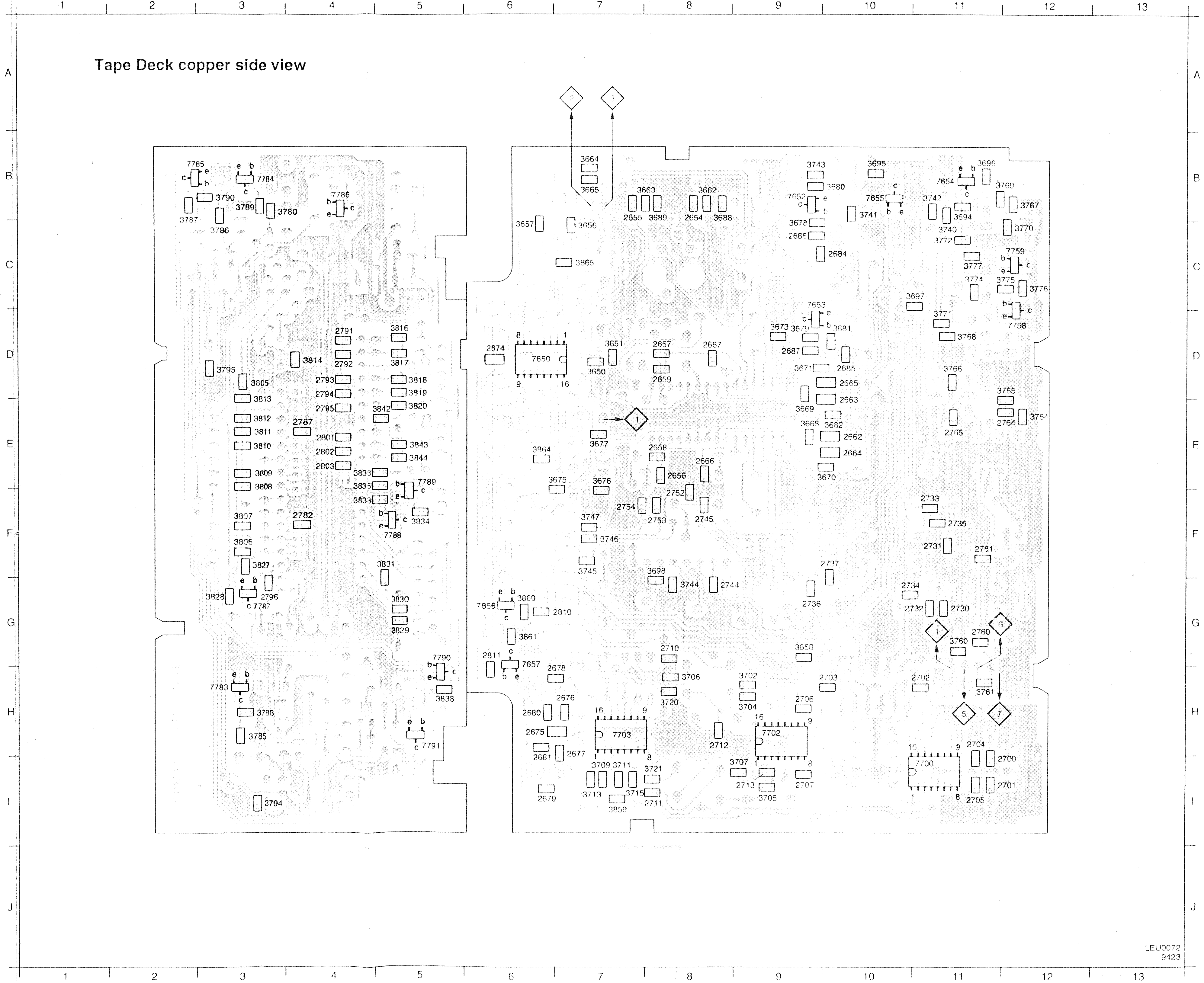
Tape Deck copper side view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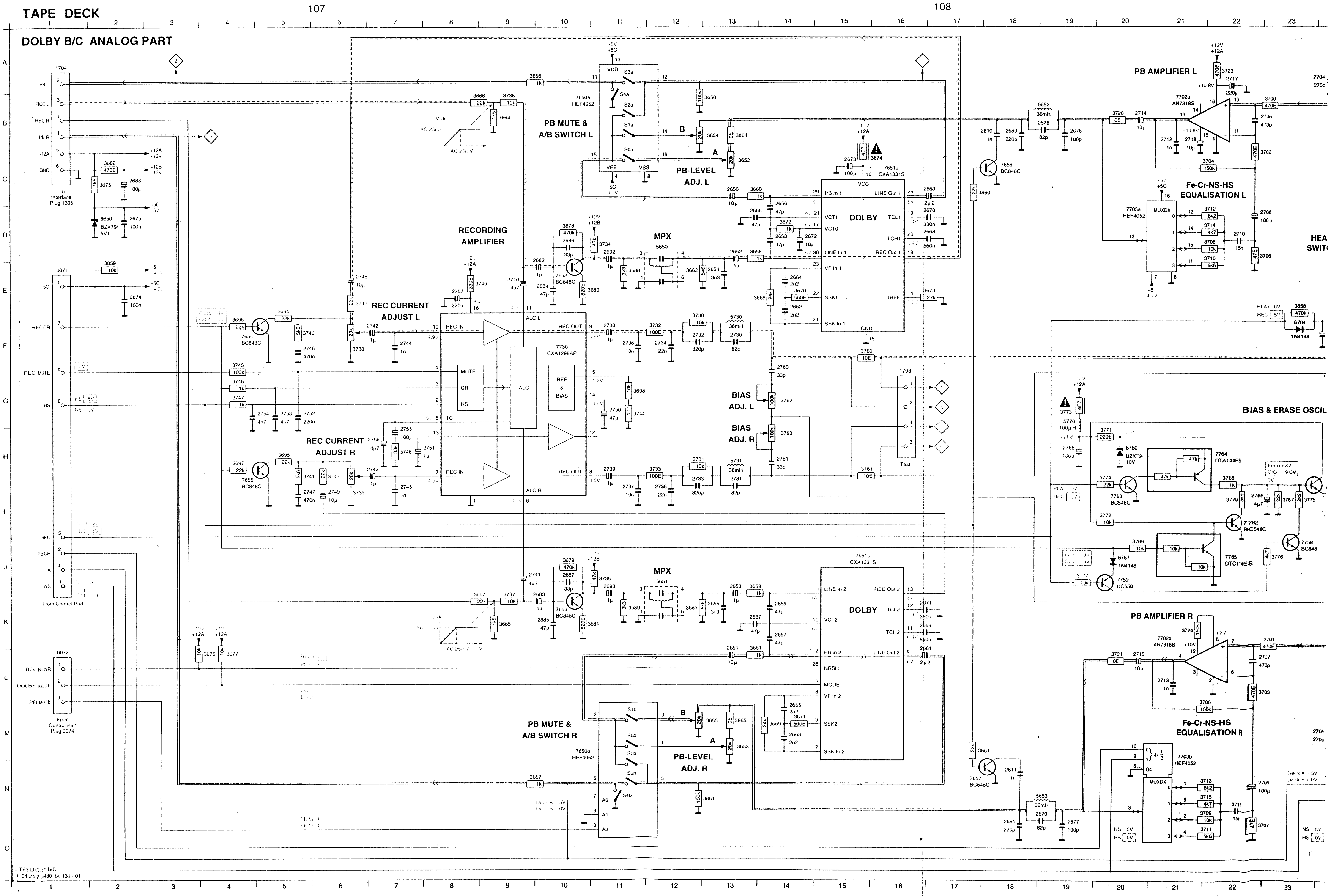
TAPE DECK

DOLBY B/C ANALOG PART



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PB AMPLIFIER L
PB AMPLIFIER R
PB MUTE &
A/B SWITCH L
PB MUTE &
A/B SWITCH R
PB-LEVEL
ADJ. L
PB-LEVEL
ADJ. R
RECORDING
AMPLIFIER
REC CURRENT
ADJUST L
REC CURRENT
ADJUST R
MPX
DOLBY
BIAS
ADJ. L
BIAS
ADJ. R
BIAS & ERASE OSCIL
Fe-Cr-NS-HS
EQUALISATION L
Fe-Cr-NS-HS
EQUALISATION R
HEA
SWIT
1704
PB L
REC L
REC R
PB R
+12A
GND
To
Interface
Plug 1305
0071
5C
REC CR
REC MUTE
HS
REC
PBCR
A
NS
From Control Part
0072
DOLBY NR
DOLBY MODE
PB MUTE
From
Control Part
Plug 0074
7650a
HEF4952
7650b
HEF4952
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CXA1331S
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7702b
AN7318S
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HEF4052
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VSS
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S4a
S2a
S1a
S0a
S1b
S0b
S2b
S3b
S4b
A0
A1
A2
A
B
REC IN
REC OUT
ALC L
ALC R
MUTE
CR
HS
TC
ALC
REF
&
BIAS
PB In 1
PB In 2
LINE Out 1
LINE Out 2
LINE In 1
LINE In 2
REC Out 1
REC Out 2
VCT1
VCT0
VCT2
TCL1
TCH1
TCL2
TCH2
VF In 1
VF In 2
SSK1
SSK2
SSK In 1
SSK In 2
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GND
VCC
NRSH
MODE
1703
Test
PLAY 0V
REC 5V
Deck A 5V
Deck B 0V
NS 5V
HS 0V
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5651
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5770
36mH
100μH
+5V
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-5C
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+10.8V
ETF3 DOLBY B/C
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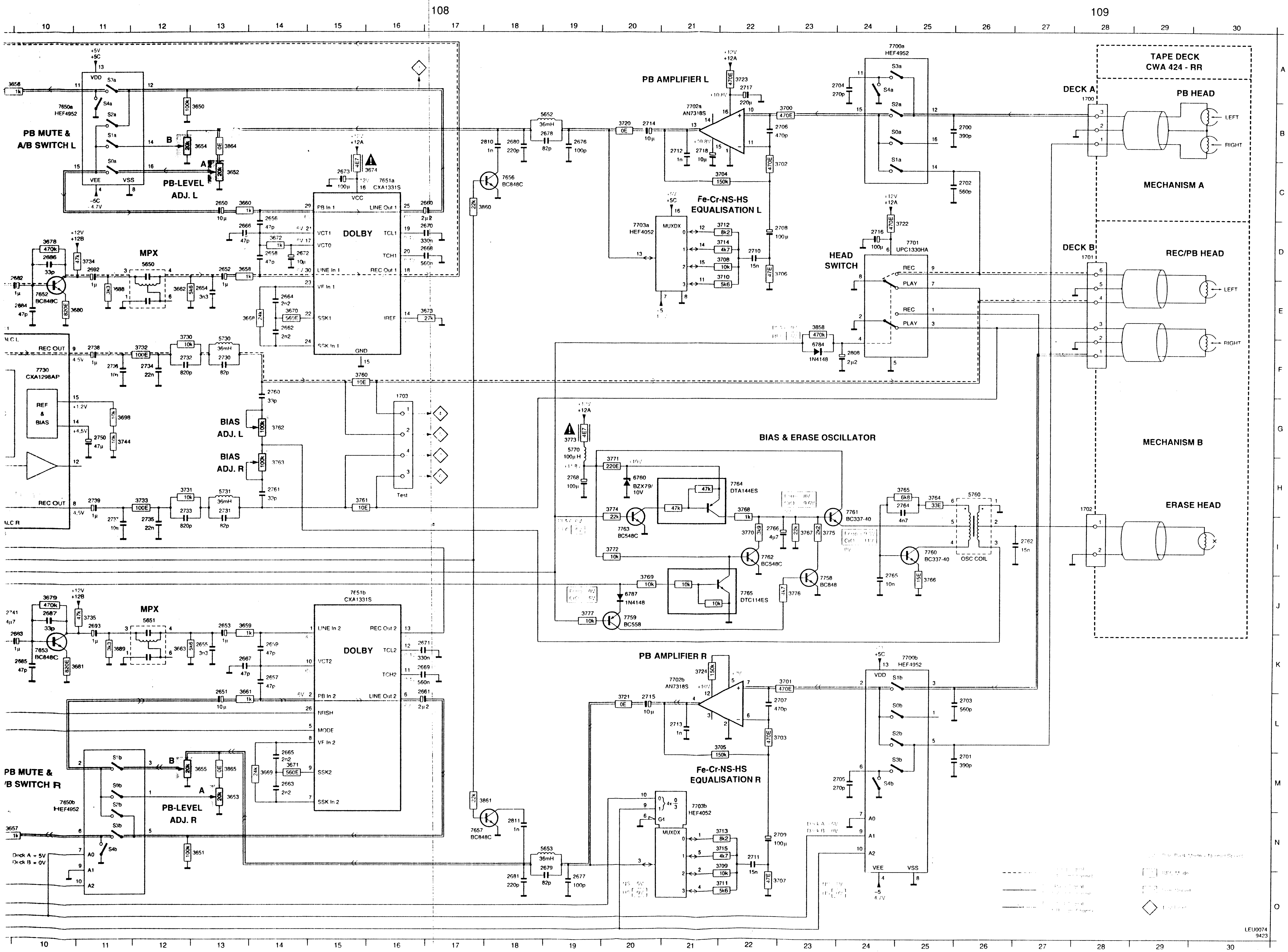
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DOLBY
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PB AMPLIFIER L
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Fe-Cr-NS-HS EQUALISATION L
7703a HEF4052
MUXDX
7700a HEF4952
HEAD SWITCH
7701 UPC1330HA
REC
PLAY
TAPE DECK CWA 424 - RR
DECK A
PB HEAD
LEFT
RIGHT
MECHANISM A
DECK B
REC/PB HEAD
MECHANISM B
ERASE HEAD
7730 CXA1298AP
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REF & BIAS
BIAS ADJ. L
BIAS ADJ. R
Test
BIAS & ERASE OSCILLATOR
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7765 DTC114ES
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7760 BC337-40
7762 BC548C
7763 BC548C
7758 BC848
7759 BC558
6760 BZX79/10V
6787 1N4148
6784 1N4148
OSC COIL
7652 BC848C
7653 BC848C
7656 BC848C
7657 BC848C
7651b CXA1331S
PB AMPLIFIER R
7702b AN7318S
Fe-Cr-NS-HS EQUALISATION R
7703b HEF4052
7700b HEF4952
PB MUTE & /B SWITCH R
7650b HEF4952
PB-LEVEL ADJ. R
Deck A = 5V
Deck B = 0V
LEU0074
9423

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2757	E8	5770	G19		
2760	F14	6650	D2		
2761	H14	6760	H20		
2762	I27	6784	F23		
2764	H25	6787	J20		
2765	J24	7650a	E10		
2766	I22	7650b	M10		
2768	H19	7651a	C16		
2808	F24	7651b	J15		
2810	B17	7652	E10		
2811	N18	7653	K10		
3650	B13	7654	F4		
3651	N13	7655	H4		
3652	C13	7656	C18		
3653	M13	7657	N17		
3654	B13	7700a	A24		
3655	M13	7700b	K25		
3656	A9	7701	D25		
3657	N9	7702a	B21		
3658	D13	7702b	K21		
3659	J13	7703a	D20		
3660	C13	7703b	M21		
3661	L13	7730	F10		
3662	E12	7758	J23		
3663	K12	7759	J20		
3664	B9	7760	I25		
3665	K9	7761	H24		
3666	B8	7762	I22		
3667	K8	7763	I20		

ELECTRICAL MEASUREMENTS AND ADJUSTMENTS

Adjustment	Cassette	Recorder in position	Measure on	Read on	Adjust with	Value	Remarks
Deck A High Speed HS	SBC419 3150Hz	High Speed dubbing	Test point TP **1**	Counter	3782	5,4kHz ±0,5%	see #1
Deck A Norm Speed NS	SBC419 3150Hz	Play in forward direction	Test point TP **2**	Counter	3783	3,15kHz ±0,5%	
Wow and Flutter	SBC419 3150Hz	Play in forward direction	Test point TP **2**	Wow and Flutter meter	check	< 0,3%	
Deck A Playback DolbyLevel	Dolby 200 N.Wb/m	Play in forward direction	TP **2** left ch TP **3** right ch	AC mV meter	3652 3653	548mV ±0,5dB	see #2
Deck B Playback DolbyLevel	Dolby 200 N.Wb/m	Play in forward direction	TP **2** left ch TP **3** right ch	AC mV meter	3654 3655	548mV ±0,5dB	
Deck A Azimuth	SBC 419 12kHz	Play in forward direction	TP **2** left ch or TP **3** right ch	AC mV meter	Left screw Norm.Dir.(>)	max. output left=right	
		Play in reverse direction			Right screw Rev.Dir.(<)		
Deck B Azimuth	SBC 419 12kHz	Play in forward direction	TP **2** left ch or TP **3** right ch	AC mV meter	Left screw Norm.Dir.(>)	max. output left=right	
		Play in reverse direction			Right screw Rev.Dir.(<)		
Bias current Chrome	-	Record mode and Chrome mode	TP **4** **5** L.ch	AC mV meter	3762	7 mV	see #3
			TP **6** **7** R.ch		3763		
Bias current Ferro	-	Record mode and Ferro mode	TP **4** **5** L.ch	AC mV meter	check	4,4mV ±0,5dB	
			TP **6** **7** R.ch		check		
Recording current	Dolby 200N Wb/m (deck A) and Chrome.cass (deck B)	Record mode and Chrome mode	TP **4** **5** L.ch	AC mV meter	3738	0,68mV	Filter out osc with audio filter see also #4
			TP **6** **7** R.ch		3739		
	Dolby 200N Wb/m (deck A) and Ferro.cass (deck B)	Record mode and Ferro mode	TP **4** **5** L.ch		check	0,45mV	
			TP **6** **7** R.ch		check		
Multiplex Filter		Record mode Inject 19kHz at line in	TP **2** left ch. TP **3** right ch	AC mV meter	5650 5651	Min. output Typ. Attenuation >40dB Min. Attenuation >30dB	
Oscillator Frequency		Record mode	TP **4** **5** L.ch	Counter	5760	88kHz ±6kHz	

#1 Motor must be aligned for HS before NS. H.S. ratio = 1,7
#2 Dolby level to be tested in reverse direction within same tolerance.
#3 Bias current must be aligned for Chrome position
#4 Recording current should be aligned using an iterative method. Perform a dubbing using test tape Dolby 200 N. Wb/m as source, and Ferro tape or Chrome tape as target blank tapes. Checkt that the output T.P.2 gives 548 mV during dubbing. Then playback the recorded tape. The record/playback level should also be 548 mV ± 1 dB. If not, adjust 3738 (L) and 3739 (R) accordingly.

DISMANTLING HINTS PLAY-BACK and REC/PLAY-BACK DECK

1 - Dismantling Play-Back Deck:

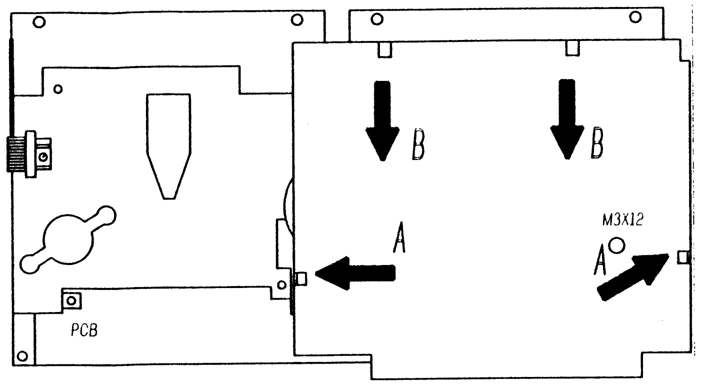


Fig. 1

Remove screw (M3x12)
Demount PCB like shown
in fig 1 arrow A - B

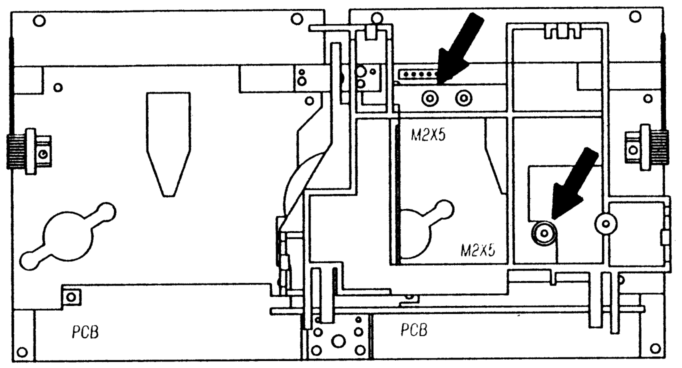


Fig. 2

Demount PCB bracket
Remove two screws (M2x5)
see arrows in fig 2

2 - Assembly Play

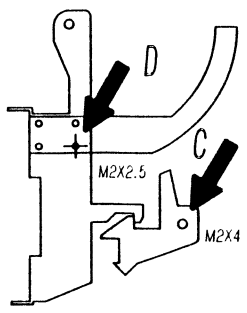


Fig. 4

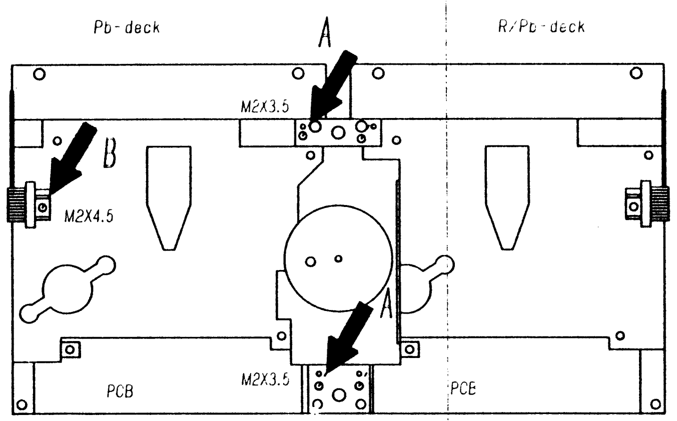


Fig. 3

Remove the 2 screws
(M2x3.5) arrows A
Remove the damper with
screw (M2x4.5) arrow B
fig 3
Remove eject arm with screw
(M2x4) arrow C
Remove gear bracket with screw
(M2x2.5) arrow D fig 4

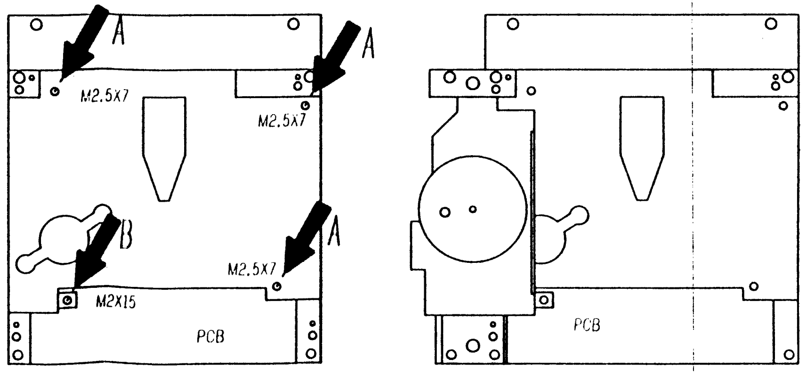


Fig. 5

Remove 3 screws (M2.5x7)
arrows A and 1 screw
(M2x15) arrow B fig 5

'E DECK

ks

1

2

sc

1

, and
e

DISMANTLING HINTS PLAY-BACK and REC/PLAY-BACK DECK

1 - Dismantling Play-Back Deck:

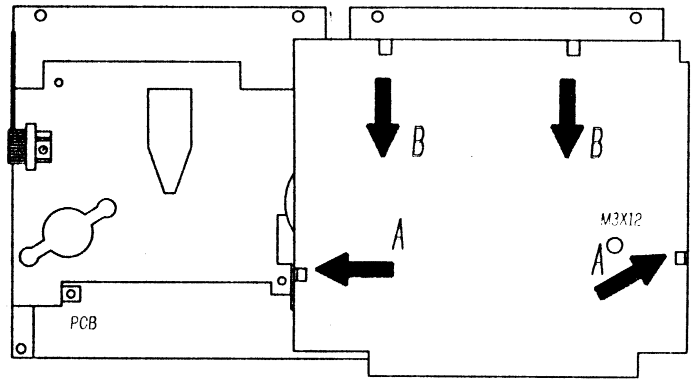

B
B
A
A
M3X12
PCB

Fig. 1

Remove screw (M3x12)
Demount PCB like shown
in fig 1 arrow A - B

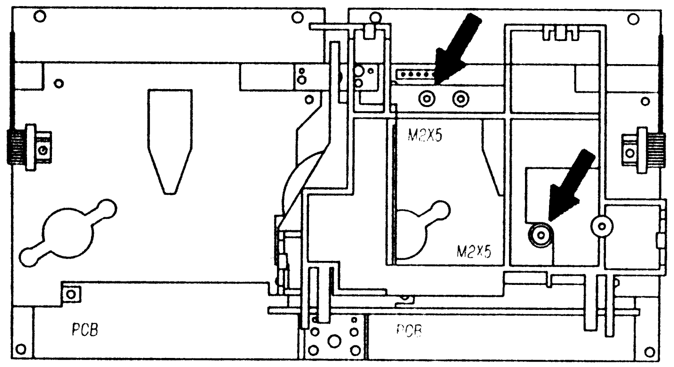

M2X5
M2X5
PCB
PCB

Fig. 2

Demount PCB bracket
Remove two screws (M2x5)
see arrows in fig 2

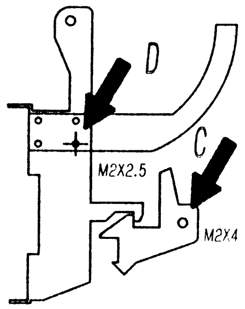

D
C
M2X2.5
M2X4

Fig. 4

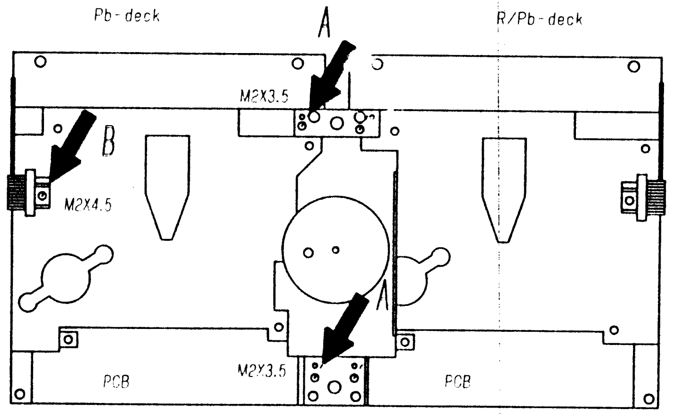

Pb-deck
R/Pb-deck
A
M2X3.5
B
M2X4.5
A
M2X3.5
PCB
PCB

Fig. 3

Remove the 2 screws
(M2x3.5) arrows A
Remove the damper with
screw (M2x4.5) arrow B
fig 3
Remove eject arm with screw
(M2x4) arrow C
Remove gear bracket with screw
(M2x2.5) arrow D fig 4

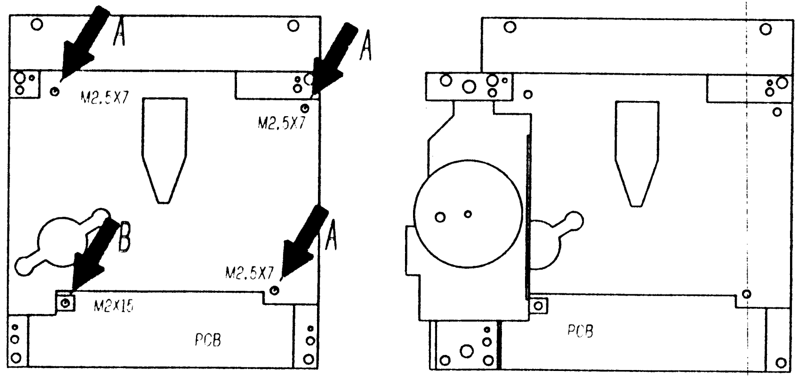

A
A
M2.5X7
M2.5X7
B
A
M2.5X7
M2X15
PCB
PCB

Fig. 5

Remove 3 screws (M2.5x7)
arrows A and 1 screw
(M2x15) arrow B fig 5

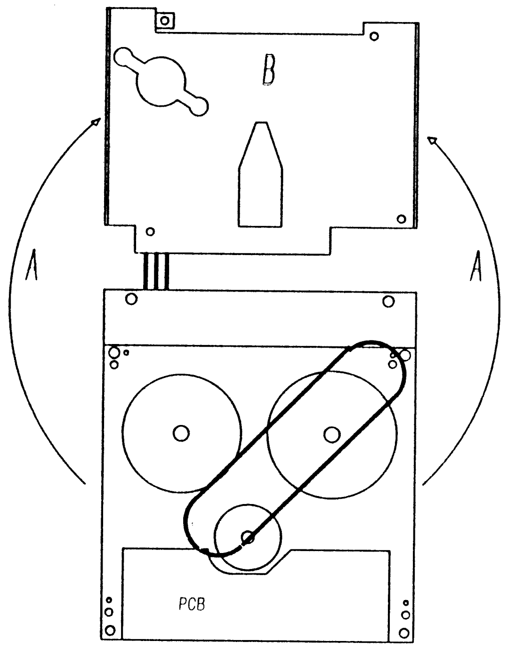


Fig. 6

Till bracket B up like arrow A
shows in fig 6

The belts and mechanical parts
are free now.

2 - Assembly Play-Back Deck:

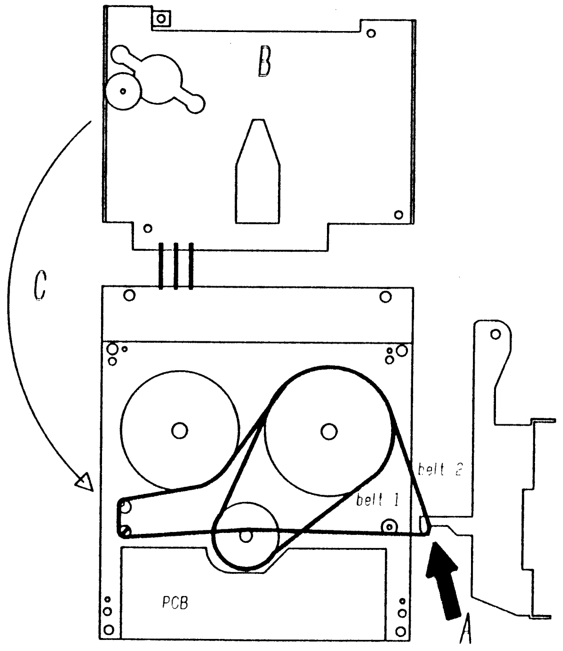

B
C
belt 2
belt 1
PCB
A

Fig. 7

Put belts in position shown
in fig 7

Belt 1 first. belt 2 second

Put belt 2 on lip of cassette
door see arrow A fig 7

Put bracket B back
see arrow C fig 7

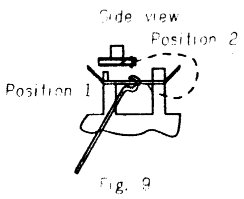

Side view
Position 2
Position 1

Fig. 9

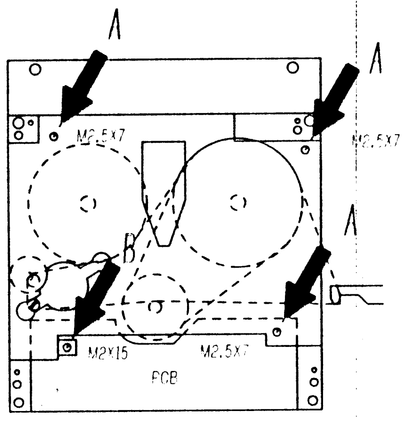

A
A
A
B
M2.5X7
M2.5X7
M2X15
M2.5X7
PCB

Fig. 8

Screw the 3 screws (M2.5x7) arrows A and screw (M2x15) arrow B back on fig 8

Put belt 2 on the wheel (from position 1 to position 2) see fig 9.

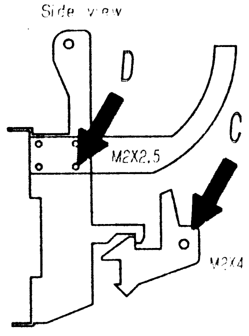

Side view
D
C
M2X2.5
M2X4

Fig. 11

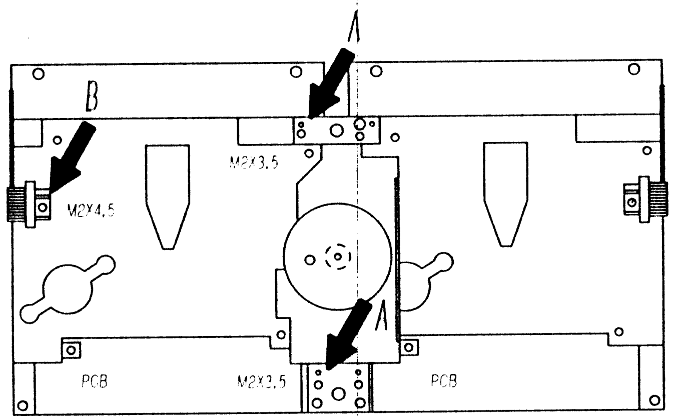

A
B
M2X4.5
M2X3.5
A
M2X3.5
PCB
PCB

Fig. 10

Put Pb-deck and R/Pb-deck together and screw the 2 screws (M2x3.5) back on.
Put the damper with screw (M2x4.5) arrow B back on see fig 10

Put eject arm with screw (M2x4) arrow C and the gear bracket with screw (M2x2.5) arrow D back on. see fig 11

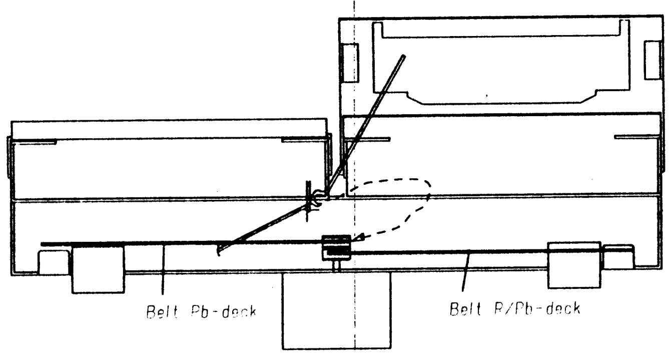

Belt Pb-deck
Belt R/Pb-deck

Fig. 12

Open cassette door of the R/PB-deck and put the belt on the motor pulley see fig 12

3 - Dismantling Rec/Play-Back Deck:

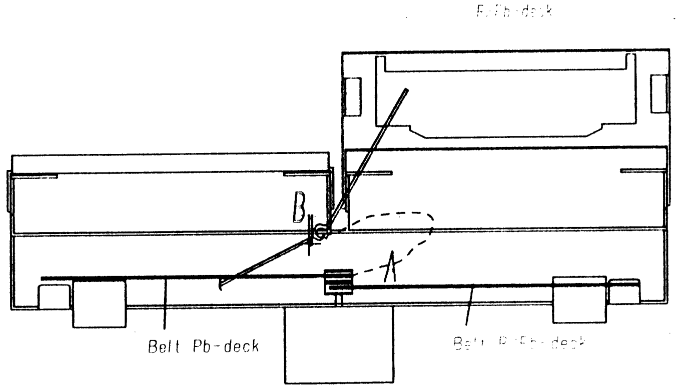

R/Pb deck
B
A
Belt Pb-deck
Belt R/Pb-deck

Fig. 1

Open Rec/Pb deck cassette door
Put Pb deck belt from the motorpulley on the nok of the Pb-deck cassette door see fig 2 from position A to position B see fig 1
This is needed to get the belt on his position from Pb-deck.

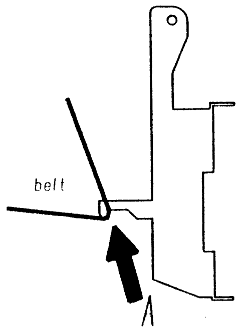


Fig. 2

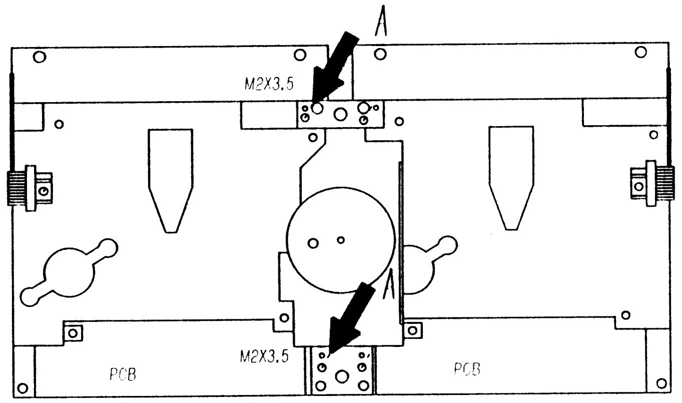

A
M2X3.5
A
M2X3.5
PCB
PCB

Fig. 3

Remove the 2 screws (M2x3.5) arrows A see fig 3

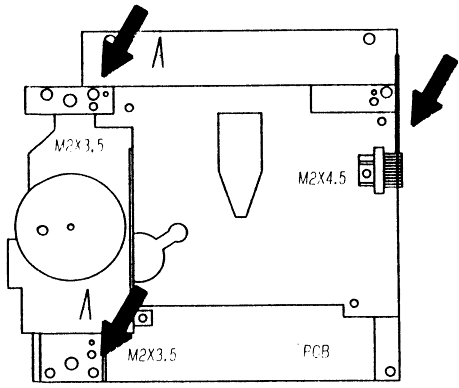

A
M2X3.5
B
M2X4.5
A
M2X3.5
PCB

Fig. 4

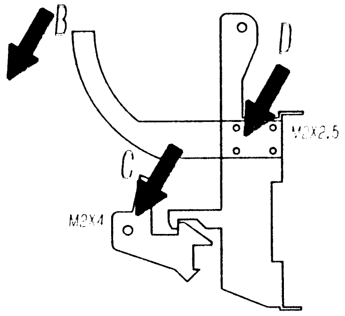

D
M2X2.5
C
M2X4

Fig. 5

Remove the 2 screws (M2x3.5) arrows A
Remove the damper with screw (M2x4.5) arrow B fig4
Remove eject arm with screw (M2x4) arrow C
Remove gear bracket with screw (M2x2.5) arrow D fig5

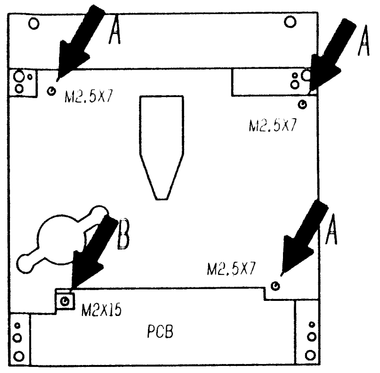

A
A
M2.5X7
M2.5X7
B
A
M2.5X7
M2X15
PCB

Fig. 6

Remove 3 screws (M2.5x7) arrows A and 1 screw (M2x15) arrow B fig 6

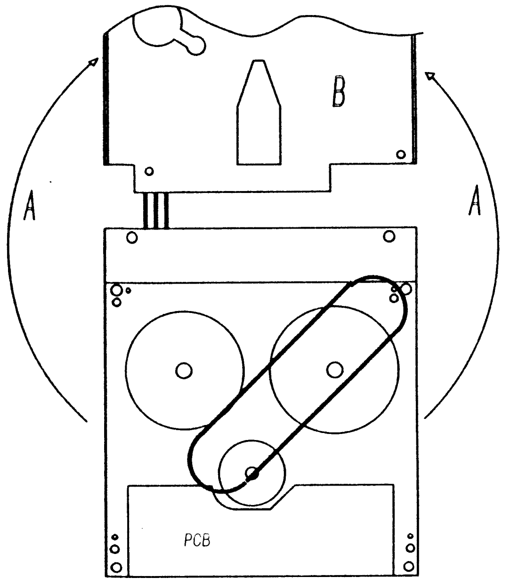


Fig. 7

Till bracket B up like arrow A shows in fig 7

The belts and mechanical parts are free now.

4 - Assembly Play-Back Deck:

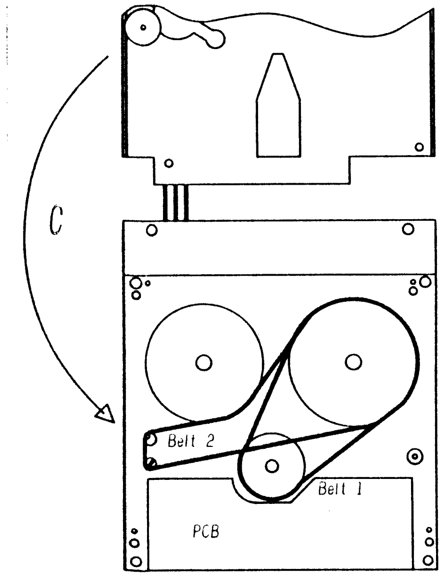

C
Belt 2
Belt 1
PCB

Fig. 8

Put belts in position shown in fig 8

Belt 1 first, belt 2 second

Put bracket B back see arrow C fig 8

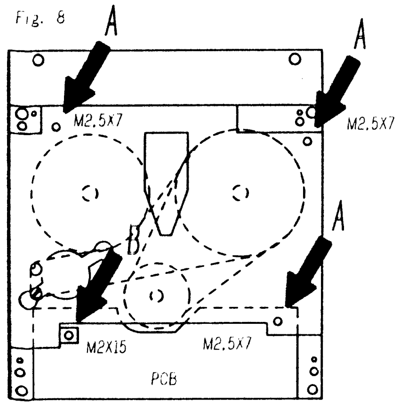

A
A
M2.5X7
M2.5X7
B
A
M2X15
M2.5X7
PCB

Fig. 9

Screw the 3 screws (M2.5x7) arrows A and screw (M2x15) arrow B back on fig 9

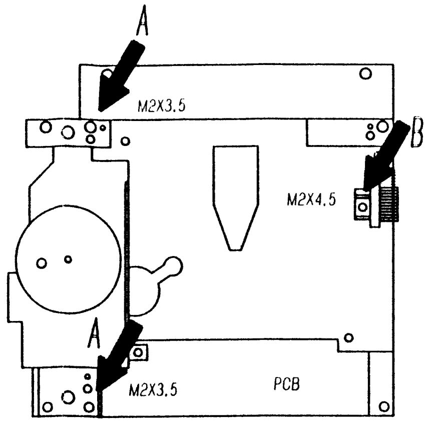

A
M2X3.5
B
M2X4.5
A
M2X3.5
PCB

Fig. 10

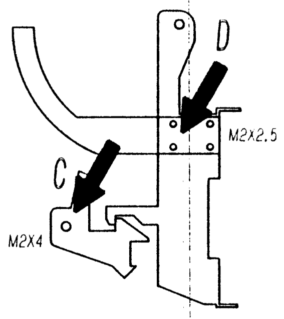

D
M2X2.5
C
M2X4

Fig. 11

Put motor back on the deck and screw with screw (M2x3.5) back on arrow A see fig 10
Put the damper with screw (M2x4.5) arrow B back on see fig 10
Put eject arm with screw (M2x4) arrow C and the gear bracket with screw (M2x2.5) arrow D back on. see fig 11

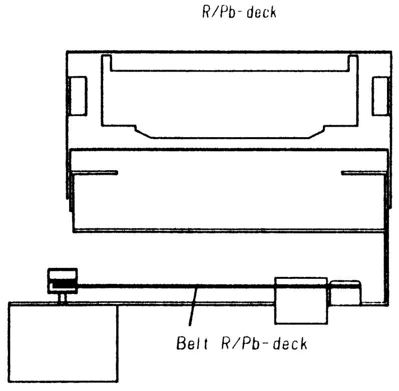

R/Pb-deck
Belt R/Pb-deck

Fig. 12

Put belt back on motor pulley see fig 12

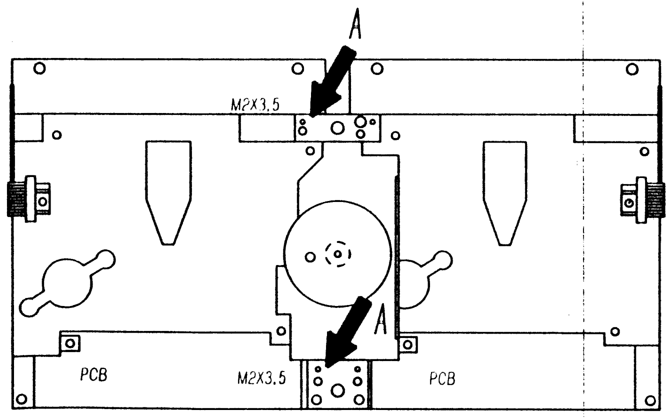

A
M2X3.5
A
PCB
M2X3.5
PCB

Fig. 13

Put Pb-deck and R/Pb-deck together and screw the 2 screws (M2x3.5) back on.
see fig 13

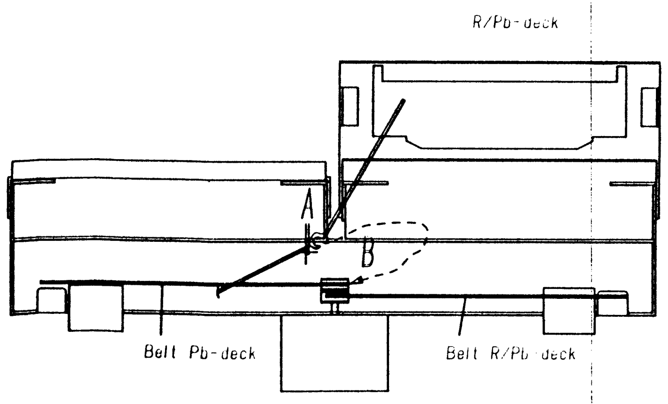
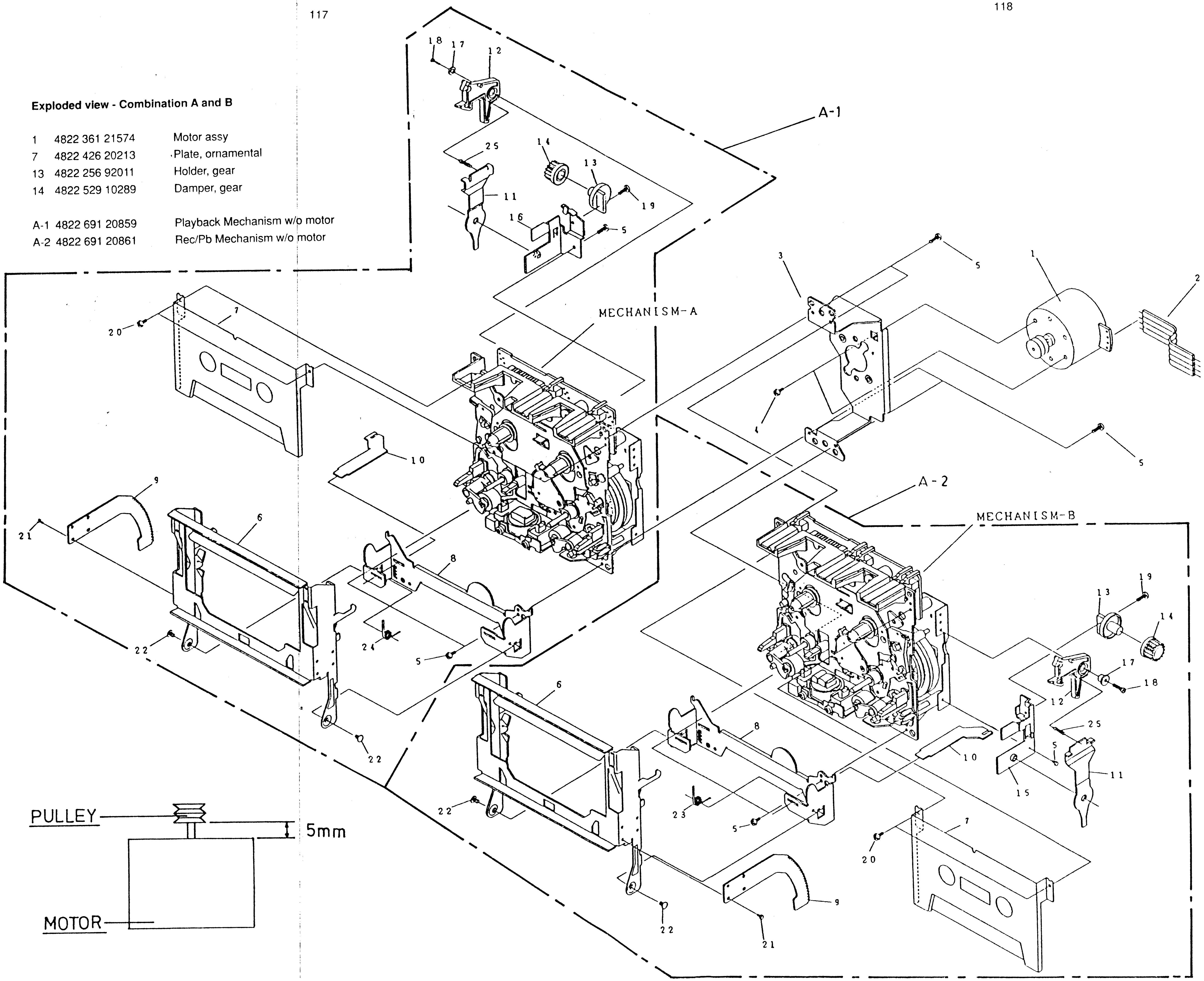

R/Pb-deck
A
B
Belt Pb-deck
Belt R/Pb-deck

Fig. 14

Open cassette door of the R/PB-deck and put the [illegible] on the motor pulley
see fig 14
From position A to position B

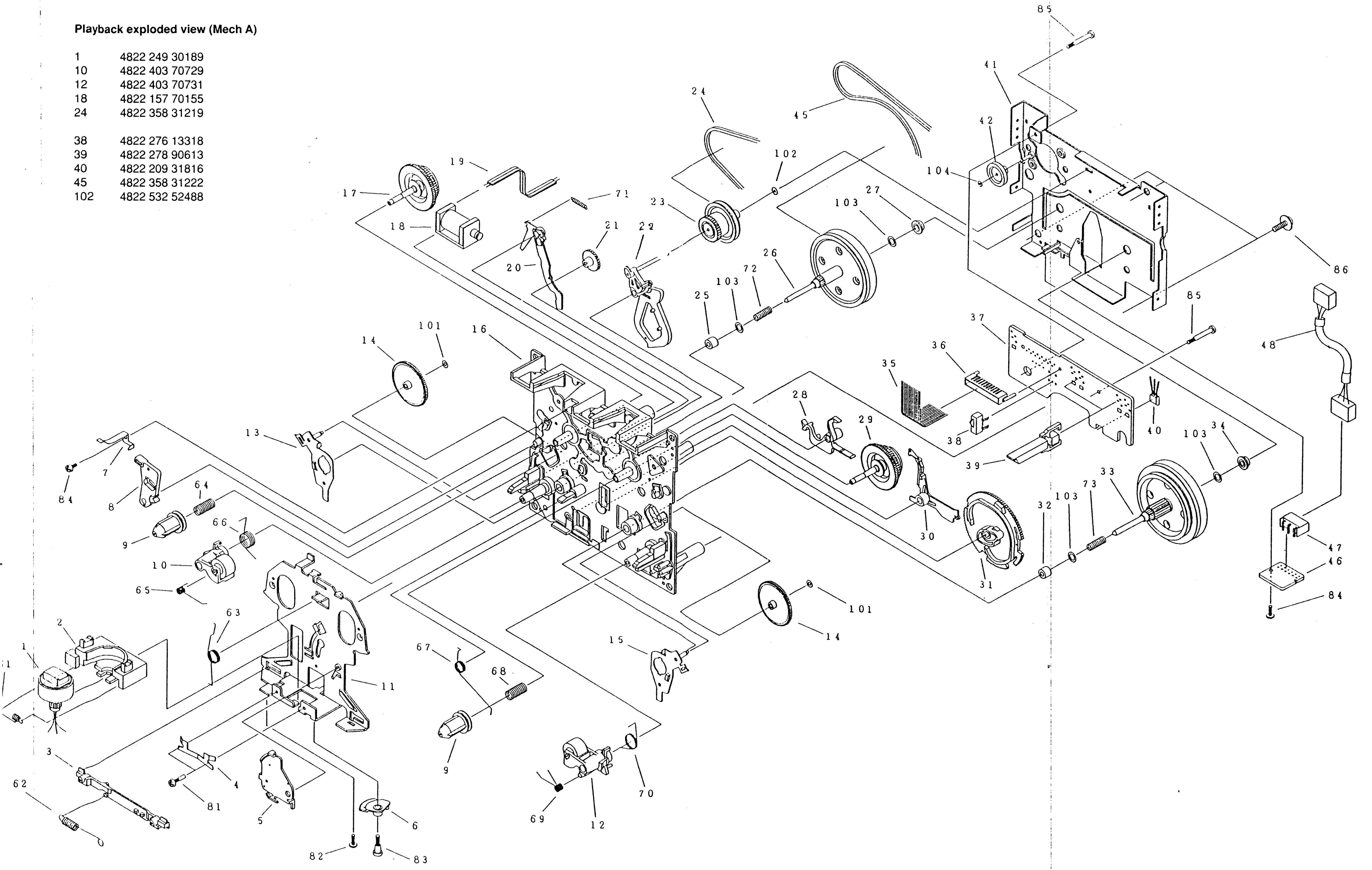
Exploded view - Combination A and B

1	4822 361 21574	Motor assy
7	4822 426 20213	Plate, ornamental
13	4822 256 92011	Holder, gear
14	4822 529 10289	Damper, gear
A-1	4822 691 20859	Playback Mechanism w/o motor
A-2	4822 691 20861	Rec/Pb Mechanism w/o motor


A-1
A-2
MECHANISM-A
MECHANISM-B
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
PULLEY
5mm
MOTOR

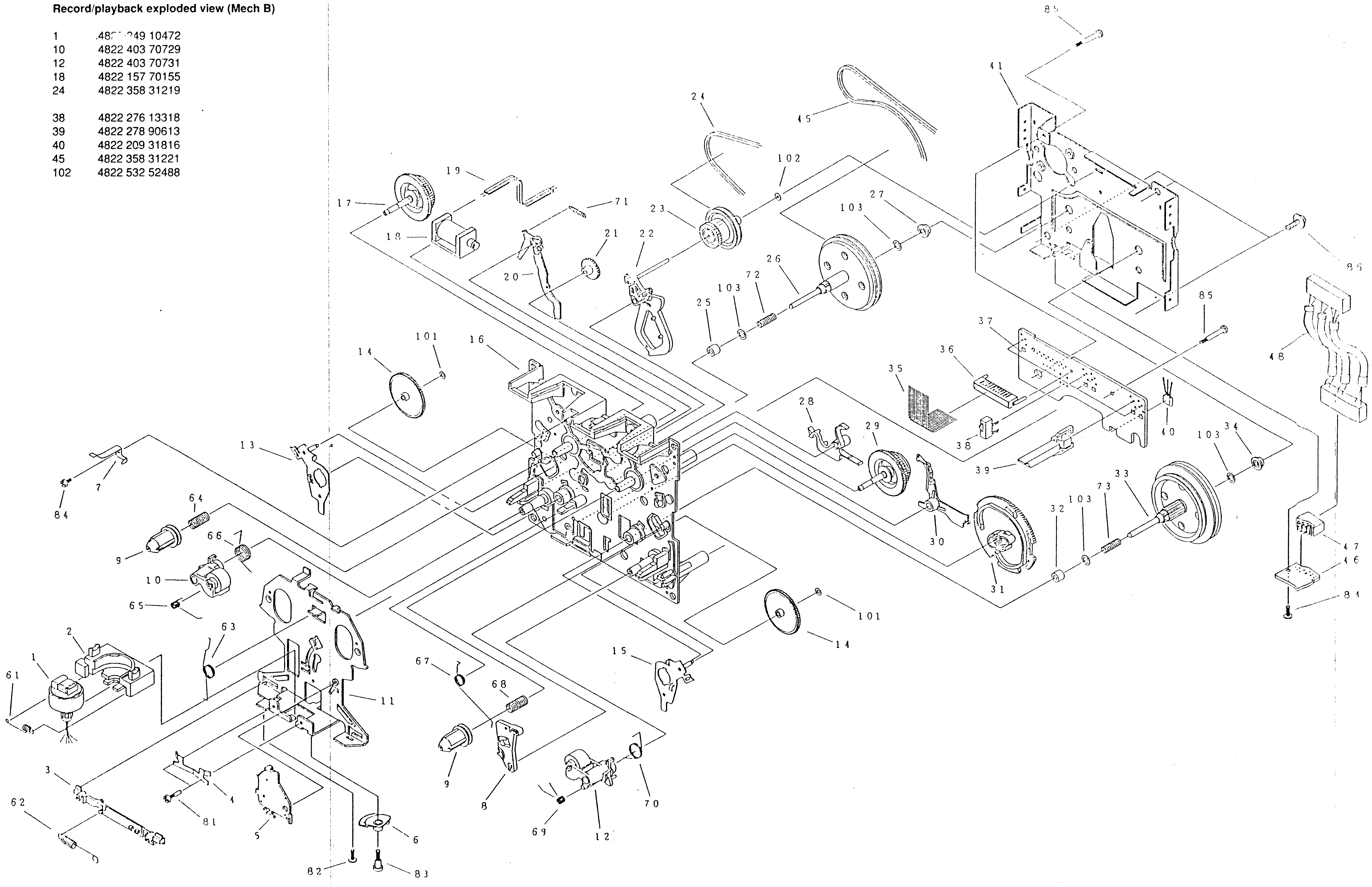
Playback exploded view (Mech A)

1	4822 249 30189
10	4822 403 70729
12	4822 403 70731
18	4822 157 70155
24	4822 358 31219
38	4822 276 13318
39	4822 278 90613
40	4822 209 31816
45	4822 358 31222
102	4822 532 52488


85
41
42
104
45
24
102
27
103
23
19
17
18
71
21
22
20
26
72
103
25
86
85
37
36
35
48
101
16
14
28
29
38
40
103
34
39
13
7
84
8
64
66
9
10
65
63
2
1
11
30
31
33
73
32
103
47
46
84
101
14
15
67
68
9
70
3
62
81
4
5
82
6
83
69
12

Record/playback exploded view (Mech B)

1	4822 249 10472
10	4822 403 70729
12	4822 403 70731
18	4822 157 70155
24	4822 358 31219
38	4822 276 13318
39	4822 278 90613
40	4822 209 31816
45	4822 358 31221
102	4822 532 52488

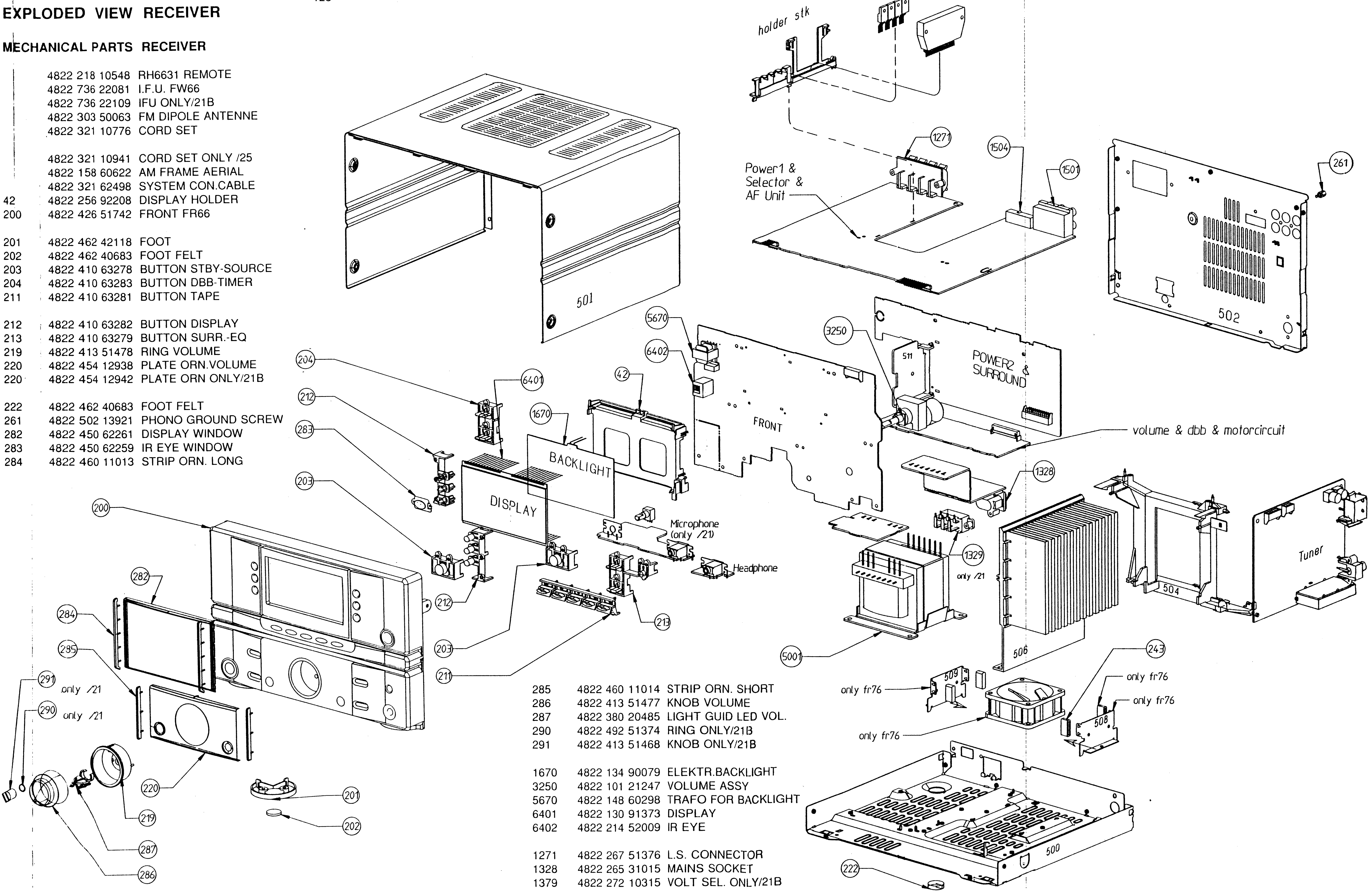


85
41
24
45
102
19
17
18
71
23
103
27
21
22
20
26
72
103
25
86
85
37
36
35
48
101
16
14
28
29
40
103
34
13
38
39
33
73
103
32
7
84
30
31
47
46
84
64
9
66
10
65
101
14
63
2
1
61
11
15
67
68
62
3
4
81
5
6
9
8
69
12
70
82
83

EXPLODED VIEW RECEIVER

MECHANICAL PARTS RECEIVER

	4822 218 10548	RH6631 REMOTE
	4822 736 22081	I.F.U. FW66
	4822 736 22109	IFU ONLY/21B
	4822 303 50063	FM DIPOLE ANTENNE
	4822 321 10776	CORD SET
	4822 321 10941	CORD SET ONLY /25
	4822 158 60622	AM FRAME AERIAL
	4822 321 62498	SYSTEM CON.CABLE
42	4822 256 92208	DISPLAY HOLDER
200	4822 426 51742	FRONT FR66
201	4822 462 42118	FOOT
202	4822 462 40683	FOOT FELT
203	4822 410 63278	BUTTON STBY-SOURCE
204	4822 410 63283	BUTTON DBB-TIMER
211	4822 410 63281	BUTTON TAPE
212	4822 410 63282	BUTTON DISPLAY
213	4822 410 63279	BUTTON SURR.-EQ
219	4822 413 51478	RING VOLUME
220	4822 454 12938	PLATE ORN.VOLUME
220	4822 454 12942	PLATE ORN ONLY/21B
222	4822 462 40683	FOOT FELT
261	4822 502 13921	PHONO GROUND SCREW
282	4822 450 62261	DISPLAY WINDOW
283	4822 450 62259	IR EYE WINDOW
284	4822 460 11013	STRIP ORN. LONG

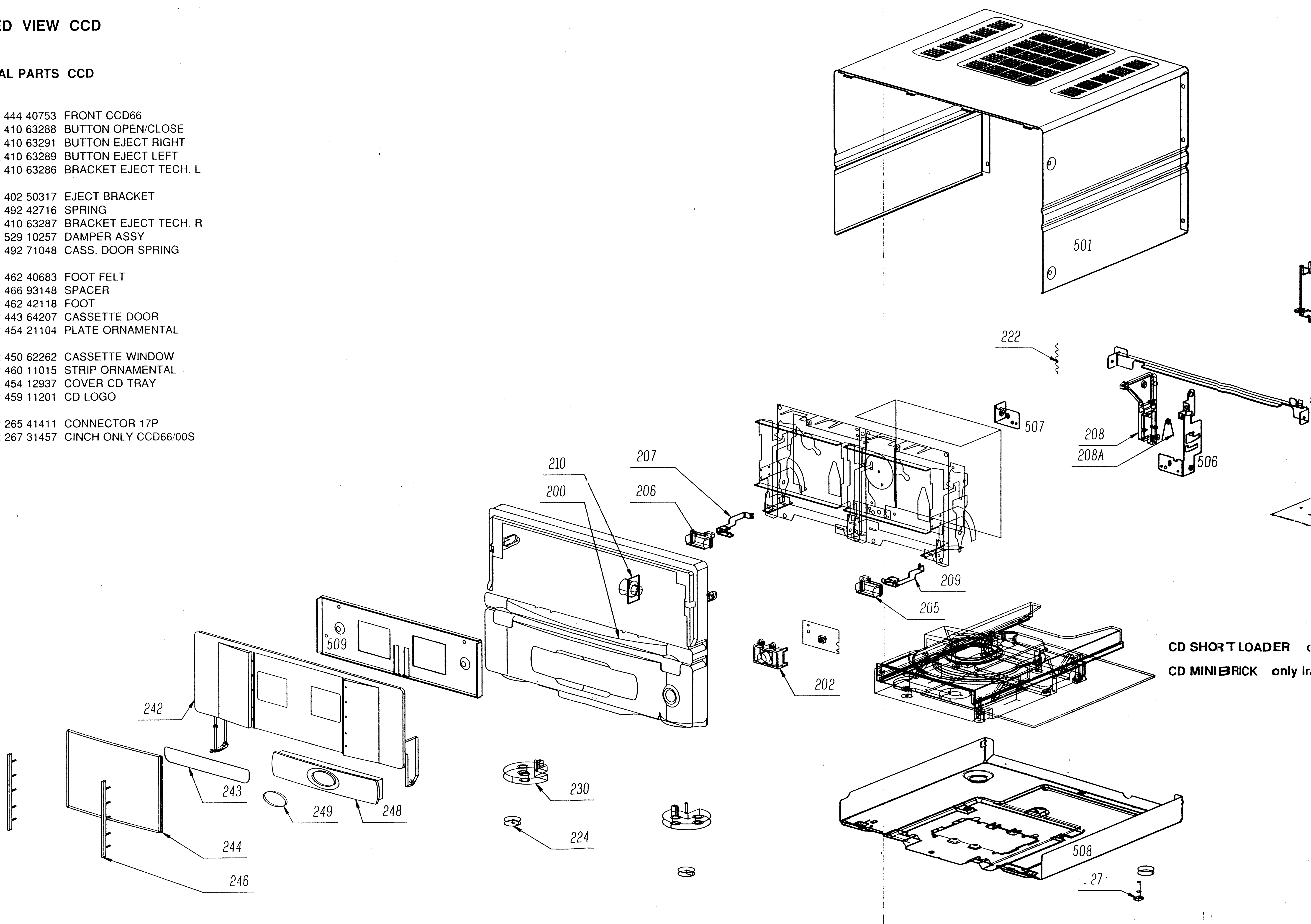

holder stk
1271
1504
1501
261
Power1 & Selector & AF Unit
502
501
5670
6402
3250
511
POWER2 & SURROUND
FRONT
volume & dbb & motorcircuit
204
6401
42
1670
BACKLIGHT
212
283
DISPLAY
203
1328
200
Microphone (only /21)
Headphone
1329
only /21
Tuner
504
282
212
213
284
5001
506
203
285
211
243
291
only /21
only fr76
509
290
only /21
only fr76
only fr76
508
220
201
219
202
287
286
500
222

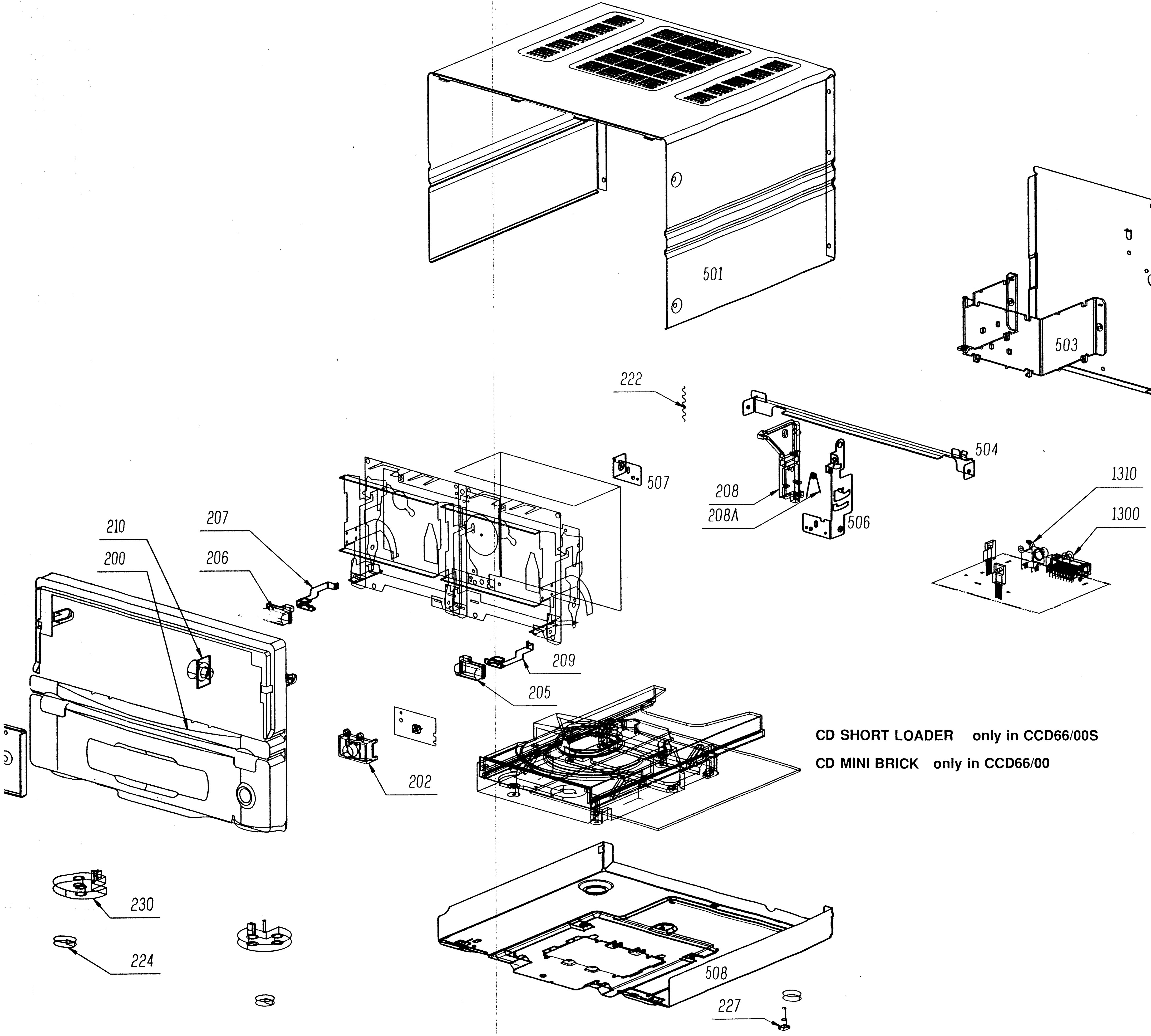
285	4822 460 11014	STRIP ORN. SHORT
286	4822 413 51477	KNOB VOLUME
287	4822 380 20485	LIGHT GUID LED VOL.
290	4822 492 51374	RING ONLY/21B
291	4822 413 51468	KNOB ONLY/21B
1670	4822 134 90079	ELEKTR.BACKLIGHT
3250	4822 101 21247	VOLUME ASSY
5670	4822 148 60298	TRAFO FOR BACKLIGHT
6401	4822 130 91373	DISPLAY
6402	4822 214 52009	IR EYE
1271	4822 267 51376	L.S. CONNECTOR
1328	4822 265 31015	MAINS SOCKET
1379	4822 272 10315	VOLT SEL. ONLY/21B
1501	4822 267 31449	CINCH PLUG
1504	4822 265 41411	CONNECTOR 17P
5001	4822 146 31375	MAINS TRAFO
5001	4822 146 31387	TRAFO ONLY /21B

EXPLODED VIEW CCD

MECHANICAL PARTS CCD

200	4822 444 40753	FRONT CCD66
202	4822 410 63288	BUTTON OPEN/CLOSE
205	4822 410 63291	BUTTON EJECT RIGHT
206	4822 410 63289	BUTTON EJECT LEFT
207	4822 410 63286	BRACKET EJECT TECH. L
208	4822 402 50317	EJECT BRACKET
208A	4822 492 42716	SPRING
209	4822 410 63287	BRACKET EJECT TECH. R
210	4822 529 10257	DAMPER ASSY
222	4822 492 71048	CASS. DOOR SPRING
224	4822 462 40683	FOOT FELT
227	4822 466 93148	SPACER
230	4822 462 42118	FOOT
242	4822 443 64207	CASSETTE DOOR
243	4822 454 21104	PLATE ORNAMENTAL
244	4822 450 62262	CASSETTE WINDOW
246	4822 460 11015	STRIP ORNAMENTAL
248	4822 454 12937	COVER CD TRAY
249	4822 459 11201	CD LOGO
1300	4822 265 41411	CONNECTOR 17P
1310	4822 267 31457	CINCH ONLY CCD66/00S


501
222
507
208
208A
506
210
207
200
206
209
205
509
202
CD SHORT LOADER
CD MINIBRICK only i
242
230
243
249
248
224
244
246
508
227


501
503
502
222
504
507
208
208A
506
1310
1300
210
207
200
206
209
205
202
230
224
508
227

CD SHORT LOADER only in CCD66/00S

CD MINI BRICK only in CCD66/00

FRONT BOARD

MISCELLANEOUS

1470	4822 276 13114	TACT SWITCH
1471	4822 276 13114	TACT SWITCH
1472	4822 276 13114	TACT SWITCH
1473	4822 276 13114	TACT SWITCH
1474	4822 276 13114	TACT SWITCH
1475	4822 276 13114	TACT SWITCH
1476	4822 276 13114	TACT SWITCH
1477	4822 276 13114	TACT SWITCH
1478	4822 276 13114	TACT SWITCH
1479	4822 276 13114	TACT SWITCH
1480	4822 276 13114	TACT SWITCH
1481	4822 276 13114	TACT SWITCH
1482	4822 276 13114	TACT SWITCH
1483	4822 276 13114	TACT SWITCH
1484	4822 276 13114	TACT SWITCH
1485	4822 276 13114	TACT SWITCH
1486	4822 276 13114	TACT SWITCH
1487	4822 276 13114	TACT SWITCH
1650	4822 267 40898	PHONE SOCK.ONLY/21B
1670	4822 134 90079	ELEKTR.BACKLIGHT
1680	4822 267 31792	PHONE SOCKET

CAPACITORS

2251	4822 121 42408	220nF 5% 63V
2252	4822 121 42408	220nF 5% 63V
2253	4822 124 40248	10µF 20% 63V
2254	4822 124 22347	47µF 50V
2255	4822 121 51387	10nF 20% 16V
2351	4822 121 42408	220nF 5% 63V
2352	4822 121 42408	220nF 5% 63V
2353	4822 121 42408	220nF 5% 63V
2354	4822 121 42408	220nF 5% 63V
2355	4822 122 33848	47pF 5%SL 50V
2356	4822 122 33848	47pF 5%SL 50V
2357	4822 124 40248	10µF 20% 63V
2358	4822 124 40248	10µF 20% 63V
2359	4822 121 42408	220nF 5% 63V
2360	4822 121 42408	220nF 5% 63V
2361	4822 124 40248	10µF 20% 63V
2375	4822 124 40433	47µF 20% 25V
2376	4822 126 11585	22nF +80-20% 25V
2377	4822 121 51412	560nF 5% 63V
2410	4822 126 11585	22nF +80-20% 25V
2411	4822 121 42408	220nF 5% 63V
2412	4822 124 22347	47µF 50V
2413	5322 121 42386	100nF 5% 63V
2414	4822 124 80818	22M 5,5V
2415	5322 124 21643	22µF 20% 40V
2416	4822 126 11585	22nF +80-20% 25V
2417	4822 121 51387	10nF 20% 16V
2418	4822 126 11585	22nF +80-20% 25V
2440	4822 122 33195	100pF 10% 50V
2441	4822 122 33195	100pF 10% 50V
2446	4822 122 33195	100pF 10% 50V
2447	4822 122 33195	100pF 10% 50V
2448	4822 122 33195	100pF 10% 50V
2449	4822 122 33195	100pF 10% 50V
2450	4822 122 10462	15pF 5%
2451	4822 122 10462	15pF 5%
2460	4822 126 11585	22nF +80-20% 25V
2461	4822 124 40248	10µF 20% 63V
2462	4822 124 40248	10µF 20% 63V
2463	4822 122 10577	3,3nF 10% 16V
2670	4822 124 40248	10µF 20% 63V
2650	4822 122 33195	100P 50V ONLY/21B
2651	4822 124 40248	10U 50V ONLY/21B
2653	5322 124 41431	22U 25V ONLY/21B
2654	4822 126 12339	2N2 16V ONLY/21B
2655	4822 124 41969	1U 50V ONLY/21B
2656	4822 126 11714	4N7 16V ONLY/21B
2657	4822 126 12339	2N2 16V ONLY/21B
2658	4822 124 41584	100U 10V ONLY/21B
2671	4822 124 40196	220µF 20% 16V
2672	4822 126 11585	22nF +80-20% 25V
2673	4822 122 33195	100pF

RESISTORS

3250	4822 101 21247	VOLUME ASSY
3251	4822 050 11002	1k 1% 0,4W
3252	4822 050 11002	1k 1% 0,4W
3253	4822 116 52276	3k9 5% 0,5W
3254	4822 116 52276	3k9 5% 0,5W
3257	4822 116 52256	2k2 5% 0,5W
3258	4822 116 52256	2k2 5% 0,5W
3259	4822 116 52219	330Ω 5% 0,5W
3260	4822 116 52219	330Ω 5% 0,5W
3261	4822 116 52219	330Ω 5% 0,5W
3262	4822 116 52219	330Ω 5% 0,5W
3263	4822 116 52296	6k8 5% 0,5W
3264	4822 116 52296	6k8 5% 0,5W
3265	4822 116 52233	10k 5% 0,5W
3266	4822 116 52256	2k2 5% 0,5W
3267	4822 116 52234	100k 5% 0,5W
3268	4822 116 52283	4k7 5% 0,5W
3269	4822 116 52256	2k2 5% 0,5W
3270	4822 116 52234	100k 5% 0,5W
3271	4822 116 52269	3k3 5% 0,5W
3351	4822 116 52284	47k 5% 0,5W
3352	4822 116 52284	47k 5% 0,5W
3353	4822 116 52251	18k 5% 0,5W
3354	4822 116 52251	18k 5% 0,5W
3355	4822 116 52277	39k 5% 0,5W
3356	4822 116 52277	39k 5% 0,5W
3357	4822 116 52277	39k 5% 0,5W
3358	4822 116 52277	39k 5% 0,5W
3359	4822 116 52233	10k 5% 0,5W
3360	4822 116 52233	10k 5% 0,5W
3361	4822 116 52303	8k2 5% 0,5W
3362	4822 116 52303	8k2 5% 0,5W
3363	4822 116 52213	180Ω 5% 0,5W
3364	4822 116 52213	180Ω 5% 0,5W
3365	4822 050 11002	1k 1% 0,4W
3366	4822 050 11002	1k 1% 0,4W
3367	4822 116 52233	10k 5% 0,5W
3368	4822 116 52256	2k2 5% 0,5W
3369	4822 116 52234	100k 5% 0,5W
3379	4822 116 52207	1k2 5% 0,5W
3380	4822 052 10108▲	1Ω 5% 0,33W
3401	4822 116 52252	180k 5% 0,5W
3403	4822 116 52233	10k 5% 0,5W
3404	4822 116 52219	330Ω 5% 0,5W
3405	4822 116 52245	150k 5% 0,5W
3406	4822 116 52234	100k 5% 0,5W
3410	4822 116 52256	2k2 5% 0,5W
3411	4822 116 52233	10k 5% 0,5W
3412	4822 050 11002	1k 1% 0,4W
3413	4822 116 52233	10k 5% 0,5W
3414	4822 116 52284	47k 5% 0,5W
3415	4822 116 52234	100k 5% 0,5W
3420	4822 116 52233	10k 5% 0,5W
3421	4822 116 52283	4k7 5% 0,5W
3422	4822 116 52233	10k 5% 0,5W
3427	4822 050 11002	1k 1% 0,4W
3428	4822 050 11002	1k 1% 0,4W
3429	4822 050 11002	1k 1% 0,4W
3430	4822 050 11002	1k 1% 0,4W
3431	4822 050 11002	1k 1% 0,4W
3432	4822 050 11002	1k 1% 0,4W
3433	4822 050 11002	1k 1% 0,4W
3439	4822 116 52234	100k 5% 0,5W
3440	4822 050 11002	1k 1% 0,4W
3442	4822 116 52233	10k 5% 0,5W
3445	4822 116 52256	2k2 5% 0,5W
3447	4822 116 52256	2k2 5% 0,5W
3448	4822 116 52256	2k2 5% 0,5W
3449	4822 116 52256	2k2 5% 0,5W
3450	4822 050 11002	1k 1% 0,4W
3451	4822 050 11002	1k 1% 0,4W
3452	4822 050 11002	1k 1% 0,4W
3460	4822 116 52283	4k7 5% 0,5W
3461	4822 116 52283	4k7 5% 0,5W
3462	4822 116 52265	270k 5% 0,5W
3463	4822 116 52265	270k 5% 0,5W
3464	4822 116 52251	18k
3465	4822 050 11002	1k 1% 0,4W
3466	4822 050 11002	1k 1% 0,4W
3467	4822 116 52257	22k 5% 0,5W
3470	4822 116 52297	68k 5% 0,5W
3471	4822 116 52297	68k 5% 0,5W
3472	4822 116 52297	68k 5% 0,5W
3473	4822 116 52297	68k 5% 0,5W
3490	4822 116 52257	22k 5% 0,5W
3492	4822 050 11002	1k 1% 0,4W
3493	4822 050 11002	1k 1% 0,4W
3494	4822 050 11002	1k 1% 0,4W
3495	4822 050 11002	1k 1% 0,4W
3496	4822 050 11002	1k 1% 0,4W
3497	4822 050 11002	1k 1% 0,4W
3498	4822 050 11002	1k 1% 0,4W
3650	4822 116 52243	1k5 ONLY/21B
3651	4822 101 11245	POT 10k ONLY/21B
3652	4822 116 52269	3k3 ONLY/21B
3653	4822 116 52283	4k7 ONLY/21B
3654	4822 116 52284	47k ONLY/21B
3655	4822 116 52234	100k ONLY/21B
3656	4822 116 52285	470k ONLY/21B
3657	4822 050 11002	1k ONLY/21B
3658	4822 116 52257	22k ONLY/21B
3659	4822 050 11002	1k ONLY/21B
3660	4822 116 52233	10k ONLY/21B
3661	4822 116 52257	22k ONLY/21B
3662	4822 116 52235▲	1M ONLY/21B
3670	4822 052 10229	22Ω 5% 0,33W
3671	4822 116 52251	18k 5% 0,5W
3672	4822 116 52202	82Ω 5% 0,5W
3673	4822 116 52233	10k 5% 0,5W
3674	4822 116 52257	22k 5% 0,5W
3675	4822 116 52233	10k 5% 0,5W

COILS

5450	4822 242 81526	X-TAL 32.768kHZ
5451	5322 242 73697	X-TAL 8MZ
5670	4822 148 60298	TRAFO FOR BACKLIGHT

DIODES

6251	4822 130 34195	BZX79-C13
6252	4822 130 30621	1N4148
6268	4822 130 30621	1N4148
6269	4822 130 34195	BZX79-C13
6351	4822 130 34195	BZX79-C13
6352	4822 13	
6353	4822 13	
6375	4822 13	
6401	4822 13	
6402	4822 214	
6403	4822 13	
6410	4822 13	
6411	4822 13	
6412	4822 13	
6413	4822 13	
6414	4822 13	
6415	4822 13	
6470	4822 13	
6471	4822 13	
6472	4822 13	
6473	4822 13	
6652	4822 13	
6670	4822 13	

TRANSISTORS

7251	4822 13
7252	4822 13
7253	5322 13
7254	5322 13
7255	5322 13
7256	5322 13
7257	4822 13
7258	4822 13
7351	4822 20
7352	4822 13
7353	4822 13
7354	4822 13
7375	4822 20
7401	5322 20
7402	5322 20
7403	4822 13
7404	4822 20
7410	4822 20
7411	4822 13
7460	4822 20
7461	4822 20
7650	4822 13
7651	4822 13
7652	4822 13
7670	4822 13
7671	4822 13
7672	4822 13

3351	4822 116 52284	47k 5% 0,5W
3352	4822 116 52284	47k 5% 0,5W
3353	4822 116 52251	18k 5% 0,5W
3354	4822 116 52251	18k 5% 0,5W
3355	4822 116 52277	39k 5% 0,5W
3356	4822 116 52277	39k 5% 0.5W
3357	4822 116 52277	39k 5% 0.5W
3358	4822 116 52277	39k 5% 0.5W
3359	4822 116 52233	10k 5% 0.5W
3360	4822 116 52233	10k 5% 0.5W
3361	4822 116 52303	8k2 5% 0,5W
3362	4822 116 52303	8k2 5% 0,5W
3363	4822 116 52213	180Ω 5% 0,5W
3364	4822 116 52213	180Ω 5% 0,5W
3365	4822 050 11002	1k 1% 0,4W
3366	4822 050 11002	1k 1% 0.4W
3367	4822 116 52233	10k 5% 0,5W
3368	4822 116 52256	2k2 5% 0.5W
3369	4822 116 52234	100k 5% 0.5W
3379	4822 116 52207	1k2 5% 0,5W
3380	4822 052 10108▲	1Ω 5% 0.33W
3401	4822 116 52252	180k 5% 0.5W
3403	4822 116 52233	10k 5% 0,5W
3404	4822 116 52219	330Ω 5% 0,5W
3405	4822 116 52245	150k 5% 0.5W
3406	4822 116 52234	100k 5% 0.5W
3410	4822 116 52256	2k2 5% 0,5W
3411	4822 116 52233	10k 5% 0,5W
3412	4822 050 11002	1k 1% 0,4W
3413	4822 116 52233	10k 5% 0,5W
3414	4822 116 52284	47k 5% 0,5W
3415	4822 116 52234	100k 5% 0,5W
3420	4822 116 52233	10k 5% 0,5W
3421	4822 116 52283	4k7 5% 0,5W
3422	4822 116 52233	10k 5% 0,5W
3427	4822 050 11002	1k 1% 0,4W
3428	4822 050 11002	1k 1% 0,4W
3429	4822 050 11002	1k 1% 0,4W
3430	4822 050 11002	1k 1% 0,4W
3431	4822 050 11002	1k 1% 0,4W
3432	4822 050 11002	1k 1% 0,4W
3433	4822 050 11002	1k 1% 0,4W
3439	4822 116 52234	100k 5% 0,5W
3440	4822 050 11002	1k 1% 0,4W
3442	4822 116 52233	10k 5% 0,5W
3445	4822 116 52256	2k2 5% 0,5W
3447	4822 116 52256	2k2 5% 0,5W
3448	4822 116 52256	2k2 5% 0,5W
3449	4822 116 52256	2k2 5% 0,5W
3450	4822 050 11002	1k 1% 0,4W
3451	4822 050 11002	1k 1% 0,4W
3452	4822 050 11002	1k 1% 0,4W
3460	4822 116 52283	4k7 5% 0,5W
3461	4822 116 52283	4k7 5% 0,5W
3462	4822 116 52265	270k 5% 0,5W
3463	4822 116 52265	270k 5% 0,5W
3464	4822 116 52251	18k
3465	4822 050 11002	1k 1% 0,4W
3466	4822 050 11002	1k 1% 0,4W
3467	4822 116 52257	22k 5% 0,5W
3470	4822 116 52297	68k 5% 0,5W
3471	4822 116 52297	68k 5% 0,5W
3472	4822 116 52297	68k 5% 0,5W
3473	4822 116 52297	68k 5% 0,5W
3490	4822 116 52257	22k 5% 0,5W
3492	4822 050 11002	1k 1% 0,4W
3493	4822 050 11002	1k 1% 0,4W
3494	4822 050 11002	1k 1% 0,4W
3495	4822 050 11002	1k 1% 0,4W
3496	4822 050 11002	1k 1% 0,4W
3497	4822 050 11002	1k 1% 0,4W
3498	4822 050 11002	1k 1% 0,4W
3650	4822 116 52243	1k5 ONLY/21B
3651	4822 101 11245	POT 10k ONLY/21B
3652	4822 116 52269	3k3 ONLY/21B
3653	4822 116 52283	4k7 ONLY/21B
3654	4822 116 52284	47k ONLY/21B
3655	4822 116 52234	100k ONLY/21B
3656	4822 116 52285	470k ONLY/21B
3657	4822 050 11002	1k ONLY/21B
3658	4822 116 52257	22k ONLY/21B
3659	4822 050 11002	1k ONLY/21B
3660	4822 116 52233	10k ONLY/21B
3661	4822 116 52257	22k ONLY/21B
3662	4822 116 52235▲	1M ONLY/21B
3670	4822 052 10229	22Ω 5% 0,33W
3671	4822 116 52251	18k 5% 0,5W
3672	4822 116 52202	82Ω 5% 0,5W
3673	4822 116 52233	10k 5% 0,5W
3674	4822 116 52257	22k 5% 0,5W
3675	4822 116 52233	10k 5% 0,5W

COILS

5450	4822 242 81526	X-TAL 32.768kHZ
5451	5322 242 73697	X-TAL 8MZ
5670	4822 148 60298	TRAFO FOR BACKLIGHT

DIODES

6251	4822 130 34195	BZX79-C13
6252	4822 130 30621	1N4148
6268	4822 130 30621	1N4148
6269	4822 130 34195	BZX79-C13
6351	4822 130 34195	BZX79-C13

6352	4822 130 30621	1N4148
6353	4822 130 30621	1N4148
6375	4822 130 34167	BZX79-C6V2
6401	4822 130 91373	LPH5549-1
6402	4822 214 52009	GP1U58XP
6403	4822 130 82978	LED - VOLUME
6410	4822 130 30621	1N4148
6411	4822 130 30621	1N4148
6412	4822 130 30621	1N4148
6413	4822 130 30621	1N4148
6414	4822 130 30621	1N4148
6415	4822 130 34167	BZX79-C6V2
6470	4822 130 30621	1N4148
6471	4822 130 30621	1N4148
6472	4822 130 30621	1N4148
6473	4822 130 30621	1N4148
6652	4822 130 30621	1N4148 ONLY/21B
6670	4822 130 30621	1N4148

TRANSISTORS & IC's

7251	4822 130 40937	BC548B
7252	4822 130 40937	BC548B
7253	5322 130 44779	BC338-40
7254	5322 130 44779	BC338-40
7255	5322 130 44779	BC338-40
7256	5322 130 44779	BC338-40
7257	4822 130 40937	BC548B
7258	4822 130 40937	BC548B
7351	4822 209 70157	NJM4560DD
7352	4822 130 40937	BC548B
7353	4822 130 40937	BC548B
7354	4822 130 40937	BC548B
7375	4822 209 63667	BA6229
7401	5322 209 11129	PCF8576T
7402	5322 209 11129	PCF8576T
7403	4822 130 40937	BC548B
7404	4822 209 33565	TMP87CP71F
7410	4822 209 80817	L7805CV
7411	4822 130 40937	BC548B
7460	4822 209 30976	ST24C02A
7461	4822 209 31515	BA3830S
7650	4822 130 40937	BC548B ONLY/21B
7651	4822 130 40937	BC548B ONLY/21B
7652	4822 130 44197	BC558B ONLY/21B
7670	4822 130 41109	BD135-16
7671	4822 130 40937	BC548B
7672	4822 130 40937	BC548B

SEL. & EQ. & POWER BOARD

MISCELLANEOUS

1271	4822 267 51376	L.S. CONNECTOR
1320	4822 071 53152▲	FUSE T 3.15A
1321	4822 071 53152▲	FUSE T 3.15A
1322	4822 071 51602▲	FUSE T 1.6A
1323	4822 071 51602▲	FUSE T 1.6A
1328	4822 265 31015▲	MAINS SOCKET
1379	4822 272 10315▲	VOLT SEL. ONLY/21B
1501	4822 267 31449	CINCH PLUG
1504	4822 265 41411	CONNECTOR 17P
1506	4822 267 51161	CONNECTOR 6 P

CAPACITORS

2270	4822 126 11585	22nF +80-20% 25V
2271	4822 124 40244	2.2µF 20% 63V
2272	4822 124 40244	2,2µF 20% 63V
2273	4822 122 33195	100pF 10% 50V
2274	4822 122 33195	100pF 10% 50V
2275	4822 122 10459	560pF 10% 50V
2276	4822 122 10459	560pF 10% 50V
2277	4822 122 33195	100pF 10% 50V
2278	4822 122 33195	100pF 10% 50V
2279	4822 124 41584	100µF 20% 10V
2280	4822 124 41584	100µF 20% 10V
2281	4822 124 22347	47µF 50V
2282	4822 124 22347	47µF 50V
2283	5322 121 42386	100nF 5% 63V
2284	5322 121 42386	100nF 5% 63V
2285	4822 124 22347	47µF 50V
2286	4822 124 22347	47µF 50V
2287	4822 124 40248	10µF 20% 63V
2289	4822 121 43526	47nF 5% 250V
2290	4822 121 43526	47nF 5% 250V
2293	4822 124 40248	10µF 20% 63V
2294	4822 124 40248	10µF 20% 63V
2295	5322 121 42386	100nF 5% 63V
2296	5322 121 42386	100nF 5% 63V
2297	5322 121 42386	100nF 5% 63V
2298	5322 121 42386	100nF 5% 63V
2299	4822 124 40248	10µF 20% 63V
2300	4822 124 40248	10µF 20% 63V
2301	4822 124 40246	4,7µF 20% 63V
2309	4822 126 11585	22nF +80-20% 25V
2310	4822 126 11585	22nF +80-20% 25V
2320	4322 121 42935	47nF 5% 100V
2321	4822 121 42935	47nF 5% 100V
2322	4822 121 42935	47nF 5% 100V
2323	4822 124 42367	3300µF 20% 35V

2324	4822 124 42367	3300µF 20% 35V
2328	4822 121 42935	47nF 5% 100V
2329	4822 121 42935	47nF 5% 100V
2330	4822 121 42935	47nF 5% 100V
2332	4822 124 80563	4700µF 20% 35V
2333	5322 124 22229	1000µF 20% 35V
2334	4822 124 40248	10µF 20% 63V
2335	4822 122 33197	1nF 10% 50V
2337	4822 124 40433	47µF 20% 25V
2339	4822 124 41525	100µF 20% 25V
2340	5322 124 21189	100µF 20% 40V
2341	4822 124 40433	47µF 20% 25V
2342	4822 122 33197	1nF 10% 50V
2343	4822 124 41525	100µF 20% 25V
2345	4822 124 40433	47µF 20% 25V
2346	4822 122 33197	1nF 10% 50V
2347	4822 124 41643	100µF 20% 16V
2348	5322 124 21189	100µF 20% 40V
2349	4822 124 40244	2,2µF 20% 63V
2503	4822 122 33195	100pF 10% 50V
2504	4822 122 33195	100pF 10% 50V
2505	4822 122 33195	100pF 10% 50V
2506	4822 122 33195	100pF 10% 50V
2507	4822 122 10459	560pF 10% 50V
2508	4822 122 10459	560pF 10% 50V
2509	4822 124 40248	10µF 20% 63V
2510	4822 124 40248	10µF 20% 63V
2511	4822 121 51387	10nF 20% 16V
2512	4822 121 51387	10nF 20% 16V
2513	4822 126 12148	2,7nF 10%
2514	4822 126 12148	2,7nF 10%
2515	4822 124 40248	10µF 20% 63V
2516	4822 124 40248	10µF 20% 63V
2517	4822 124 40248	10µF 20% 63V
2518	4822 124 40248	10µF 20% 63V
2525	4822 124 40248	10µF 20% 63V
2526	4822 124 40248	10µF 20% 63V
2547	4822 124 40244	2,2µF 20% 63V
2548	4822 124 40244	2,2µF 20% 63V
2549	4822 122 33195	100pF 10% 50V
2550	4822 122 33195	100pF 10% 50V
2551	4822 122 33192	27pF 5% 50V
2552	4822 122 33192	27pF 5% 50V
2553	4822 124 40246	4,7µF 20% 63V
2554	4822 124 40246	4,7µF 20% 63V
2555	4822 124 40248	10µF 20% 63V
2556	4822 124 40248	10µF 20% 63V
2561	4822 126 11585	22 nF
2562	4822 126 11585	22 nF
2565	4822 124 40244	2,2µF 20% 63V
2566	4822 124 40244	2,2µF 20% 63V
2567	4822 122 33195	100pF 10% 50V
2568	4822 122 33195	100pF 10% 50V
2569	4822 122 33195	100pF 10% 50V

2570	4822 122 33195	100pF 10% 50V
2571	4822 126 11714	4,7nF 20%
2572	4822 126 11714	4,7nF 20%
2573	4822 124 40248	10µF 20% 63V
2574	4822 124 40248	10µF 20% 63V
2575	4822 124 40248	10µF 20% 63V
2576	4822 124 40248	10µF 20% 63V
2577	4822 124 40242	1µF 20% 63V
2578	4822 124 40248	10µF 20% 63V
2591	4822 121 41856	22nF 5% 250V
2592	4822 121 41856	22nF 5% 250V
2593	5322 121 42465	68nF 5% 63V
2594	5322 121 42465	68nF 5% 63V
2595	4822 121 41857	10nF 5% 250V
2596	4822 121 41857	10nF 5% 250V
2597	4822 121 41856	22nF 5% 250V
2598	4822 121 41856	22nF 5% 250V
2599	4822 126 11714	4,7nF 20%
2600	4822 126 11714	4,7nF 20%
2601	4822 124 40248	10µF 20% 63V
2602	4822 124 40248	10µF 20% 63V
2603	4822 124 40248	10µF 20% 63V
2604	4822 124 40248	10µF 20% 63V

RESISTORS

3271	4822 050 11002	1k 1% 0,4W
3272	4822 050 11002	1k 1% 0,4W
3273	4822 116 52291	56k 5% 0,5W
3274	4822 116 52291	56k 5% 0,5W
3275	4822 116 52226	560Ω 5% 0,5W
3276	4822 116 52226	560Ω 5% 0,5W
3277	4822 116 52256	2k2 5% 0,5W
3278	4822 116 52256	2k2 5% 0,5W
3279	4822 116 52256	2k2 5% 0,5W
3280	4822 116 52256	2k2 5% 0,5W
3281	4822 050 11002	1k 1% 0,4W
3282	4822 050 11002	1k 1% 0,4W
3283	4822 116 52291	56k 5% 0,5W
3284	4822 116 52291	56k 5% 0,5W
3285	4822 052 10109▲	10Ω 5% 0,33W
3286	4822 052 10101▲	100Ω 5% 0,33W
3287	4822 116 52303	8k2 5% 0,5W
3288	4822 116 52257	22k 5% 0,5W
3289	4822 116 52263	2k7 5% 0,5W
3293	4822 052 10478▲	4Ω7 5% 0,33W
3294	4822 052 10478▲	4Ω7 5% 0,33W
3295	4822 116 52228	680Ω 5% 0,5W
3296	4822 116 52228	680Ω 5% 0,5W
3297	4822 050 11002	1k 1% 0,4W
3298	4822 050 11002	1k 1% 0,4W

3299	4822 117 11342	0Ω33 5% 2W
3300	4822 117 11342	0Ω33 5% 2W
3301	4822 117 11342	0Ω33 5% 2W
3302	4822 117 11342	0Ω33 5% 2W
3303	4822 052 10109▲	10Ω 5% 0,33W
3304	4822 052 10109▲	10Ω 5% 0,33W
3305	4822 116 52277	39k 5% 0.5W
3306	4822 116 52277	39k 5% 0.5W
3307	4822 116 52291	56k 5% 0.5W
3308	4822 116 52211	150Ω 5% 0,5W
3310	4822 116 52257	22k 5% 0.5W
3311	4822 116 52257	22k 5% 0.5W
3312	4822 116 52277	39k 5% 0.5W
3313	4822 116 52283	4k7 5% 0,5W
3320	4822 116 52283	4k7 5% 0,5W
3321	4822 116 52269	3k3 5% 0.5W
3322	4822 050 11002	1k 1% 0.4W
3323	4822 116 52244	15k 5% 0.5W
3324	4822 116 52233	10k 5% 0,5W
3327	4822 052 10478▲	4Ω7 5% 0.33W
3328	4822 116 52249	1k8 5% 0,5W
3329	4822 116 52207	1k2 5% 0,5W
3331	4822 052 10399▲	39Ω 5% 0,33W
3333	4822 052 10478▲	4Ω7 5% 0,33W
3334	4822 052 10478▲	4Ω7 5% 0.33W
3336	4822 116 52233	10k 5% 0.5W
3337	4822 116 52245	150k 5% 0.5W
3339	4822 116 52234	100k 5% 0,5W
3340	4822 116 52233	10k 5% 0.5W
3343	4822 116 52256	2k2 5% 0,5W
3345	4822 116 52256	2k2 5% 0,5W
3346	4822 116 52283	4k7 5% 0,5W
3347	4822 116 52256	2k2 5% 0.5W
3348	4822 116 52283	4k7 5% 0,5W
3349	4822 116 52256	2k2 5% 0.5W
3350	4822 116 52283	4k7 5% 0,5W
3500	4822 116 52202	82 Ω
3501	4822 116 52224	470Ω 5% 0.5W
3502	4822 116 52224	470Ω 5% 0,5W
3503	4822 116 52224	470Ω 5% 0,5W
3504	4822 116 52224	470Ω 5% 0,5W
3505	4822 116 52284	47k 5% 0,5W
3506	4822 116 52284	47k 5% 0,5W
3507	4822 116 52175	100Ω 5% 0,5W
3508	4822 116 52175	100Ω 5% 0.5W
3509	4822 116 52231	820Ω 5% 0.5W
3510	4822 116 52231	820Ω 5% 0.5W
3511	4822 116 52272	330k 5% 0.5W
3512	4822 116 52272	330k 5% 0.5W
3513	4822 116 52264	27k 5% 0,5W
3514	4822 116 52264	27k 5% 0.5W
3515	4822 116 52264	27k 5% 0.5W
3516	4822 116 52264	27k 5% 0.5W
3517	4822 116 52257	22k 5% 0.5W

3518	4822 116 52257	22k 5% 0,5W
3519	4822 116 52213	180Ω 5% 0.5W
3520	4822 116 52213	180Ω 5% 0,5W
3521	4822 116 52233	10k 5% 0,5W
3523	4822 116 52285	470k 5% 0.5W
3524	4822 116 52285	470k 5% 0.5W
3525	4822 116 52284	47k 5% 0,5W
3526	4822 116 52284	47k 5% 0,5W
3527	4822 116 52257	22k 5% 0,5W
3528	4822 116 52257	22k 5% 0,5W
3529	4822 116 52256	2k2 5% 0.5W
3530	4822 116 52256	2k2 5% 0.5W
3531	4822 116 52304	82k 5% 0.5W
3532	4822 116 52304	82k 5% 0.5W
3533	4822 116 52264	27k 5% 0.5W
3534	4822 116 52264	27k 5% 0,5W
3535	4822 116 52256	2k2 5% 0.5W
3536	4822 116 52256	2k2 5% 0.5W
3537	4822 116 52283	4k7 5% 0.5W
3538	4822 116 52283	4k7 5% 0,5W
3539	4822 116 52233	10k 5% 0,5W
3540	4822 116 52233	10k 5% 0,5W
3541	4822 116 52296	6k8 5% 0,5W
3542	4822 116 52296	6k8 5% 0,5W
3543	4822 116 52213	180Ω 5% 0,5W
3544	4822 116 52213	180Ω 5% 0,5W
3545	4822 116 52233	10k 5% 0,5W
3546	4822 116 52256	2k2 5% 0,5W
3547	4822 116 52257	22k 5% 0,5W
3548	4822 116 52257	22k 5% 0,5W
3549	4822 116 52234	100k 5% 0,5W
3550	4822 116 52234	100k 5% 0,5W
3551	4822 116 52264	27k ONLY/21B
3552	4822 116 52264	27k ONLY/21B
3553	4822 116 52226	560Ω 5% 0,5W
3554	4822 116 52226	560Ω 5% 0,5W
3555	4822 116 52252	180k 5% 0,5W
3556	4822 116 52252	180k 5% 0,5W
3559	4822 116 52213	180Ω 5% 0,5W
3560	4822 116 52213	180Ω 5% 0,5W
3565	4822 116 52224	470Ω 5% 0,5W
3566	4822 116 52224	470Ω 5% 0,5W
3567	4822 116 52297	68k 5% 0,5W
3568	4822 116 52297	68k 5% 0,5W
3569	4822 116 52239	120k 5% 0,5W
3570	4822 116 52239	120k 5% 0,5W
3571	4822 050 11002	1k 1% 0,4W
3572	4822 050 11002	1k 1% 0,4W
3573	4822 116 52233	10k 5% 0,5W
3574	4822 116 52233	10k 5% 0,5W
3579	4822 050 21006	10M 1% 0,5W
3580	4822 116 52233	10k 5% 0,5W
3581	4822 116 52234	100k 5% 0,5W
3582	4822 116 52284	47k 5% 0,5W

3583	4822 116 52213	180Ω 5% 0,5W
3584	4822 116 52213	180Ω 5% 0,5W
3591	4822 116 52238	12k 5% 0,5W
3592	4822 116 52238	12k 5% 0,5W
3593	4822 116 52271	33k 5% 0,5W
3594	4822 116 52271	33k 5% 0,5W
3595	4822 116 52257	22k 5% 0,5W
3596	4822 116 52257	22k 5% 0,5W
3597	4822 116 52285	470k 5% 0,5W
3598	4822 116 52285	470k 5% 0,5W
3599	4822 116 52243	1k5 5% 0,5W
3600	4822 116 52243	1k5 5% 0,5W
3601	4822 116 52285	470k 5% 0,5W
3602	4822 116 52285	470k 5% 0,5W
3603	4822 050 11002	1k 1% 0,4W
3604	4822 050 11002	1k 1% 0,4W
3605	4822 116 52285	470k 5% 0,5W
3606	4822 116 52285	470k 5% 0,5W
3607	4822 050 11002	1k 1% 0,4W
3608	4822 050 11002	1k 1% 0,4W
3609	4822 116 52265	270k 5% 0,5W
3610	4822 116 52265	270k 5% 0,5W
3611	4822 116 52213	180Ω 5% 0,5W
3612	4822 116 52213	180Ω 5% 0,5W
3613	4822 116 52283	4k7 5% 0,5W
3614	4822 116 52283	4k7 5% 0,5W
3615	4822 116 52213	180Ω 5% 0,5W
3616	4822 116 52213	180Ω 5% 0,5W
3617	4822 116 52285	470k 5% 0,5W
3618	4822 116 52285	470k 5% 0,5W
3621	4822 053 12331	330Ω 5% 3W
3622	4822 053 12331	330Ω 5% 3W
3623	4822 050 22201	220Ω 1% 0,6W
3624	4822 050 22201	220Ω 1% 0,6W

COILS

5271	4822 157 62255	COIL 18.5 TURNS
5272	4822 157 62255	COIL 18.5 TURNS
5273	4822 280 60585	RELAY
5274	4822 157 70003▲	MAINS CHOKE
5001	4822 146 31375▲	MAINS TRAFO
5001	4822 146 31387▲	TRAFO ONLY /21B

DIODES

6270	4822 130 30621	1N4148
6271	4822 130 34499	BZX79-C20
6272	4822 130 34499	BZX79-C20
6275	4822 130 30621	1N4148
6276	4822 130 30621	1N4148
6277	4822 130 30621	1N4148
6278	4822 130 30621	1N4148
6280	4822 130 30621	1N4148
6281	4822 130 30621	1N4148
6282	4822 130 30621	1N4148
6320	4822 130 82079▲	D3SBA20
6322	4822 130 31982▲	BYV27-100
6323	4822 130 31982▲	BYV27-100
6324	5322 130 30684▲	1N4002GP
6325	5322 130 30684▲	1N4002GP
6330	4822 130 34233	BZX79-C5V1
6331	4822 130 34233	BZX79-C5V1
6332	4822 130 30621	1N4148
6333	4822 130 34197	BZX79-C12
6335	4822 130 34174	BZX79-C4V7
6336	4822 130 30861	BZX79-C7V5
6340	4822 130 30621	1N4148
6341	4822 130 30621	1N4148
6342	4822 130 30621	1N4148
6343	4822 130 30621	1N4148
6344	4822 130 30621	1N4148
6345	4822 130 30621	1N4148
6346	4822 130 30621	1N4148
6347	4822 130 30621	1N4148
6523	4822 130 30621	1N4148
6524	4822 130 30621	1N4148
6525	4822 130 30621	1N4148
6565	4822 130 30621	1N4148

TRANSISTORS & IC's

7271	4822 130 44461	BC546B
7272	4822 130 44461	BC546B
7274	4822 130 40937	BC548B
7275	4822 130 40937	BC548B
7277	4822 209 31514▲	STK4132II
7320	4822 130 63614	BDX54AFI
7322	4822 209 33575	L7812CP
7324	4822 130 63615	BD241BFI
7326	4822 130 63575	BD242BF
7327	4822 130 40959	BC547B
7328	4822 130 40823	BD135
7329	4822 130 40959	BC547B
7330	4822 130 41691	BC556B
7332	4822 130 40937	BC548B
7333	4822 130 40937	BC548B
7345	4822 130 40937	BC548B
7346	4822 130 40937	BC548B
7347	4822 130 40937	BC548B
7501	4822 209 70157	NJM4560DD
7523	4822 209 10263	HEF4052BP

7524	4822 130 44197	BC558B
7525	4822 130 40937	BC548B
7526	4822 130 40937	BC548B
7527	4822 130 40937	BC548B
7528	4822 130 40937	BC548B
7547	4822 209 70157	NJM4560DD
7565	4822 209 70157	NJM4560DD
7566	4822 130 44197	BC558B
7567	4822 130 41024	BF245B
7591	4822 130 40937	BC548B
7592	4822 130 40937	BC548B
7593	4822 209 10262	HEF4051BP
7594	4822 209 10262	HEF4051BP

INTERFACE BOARD

MISCELLANEOUS

1000	4822 492 63051	SPRING CLIP
1300	4822 265 41411	CONNECTOR 17P
1310	4822 267 31457	CINCH ONLY CCD66/00S
1320	4822 276 13114	TACT SWITCH

CAPACITORS

2400	5322 124 21189	100µF 20% 40V
2402	4822 122 33197	1nF 10% 50V
2403	4822 124 40248	10µF 20% 63V
2404	4822 124 41525	100µF 20% 25V
2405	4822 122 33197	1nF 10% 50V
2406	4822 124 41525	100µF 20% 25V
2407	4822 122 33195	100pF 10% 50V
2408	4822 122 33195	100pF 10% 50V
2409	4822 122 33195	100pF 10% 50V
2410	5322 121 42386	100nF 5% 63V
2411	4822 122 33519	470pF 10% 50V
2412	4822 122 33519	470pF 10% 50V
2413	4822 124 40248	10µF 20% 63V
2414	4822 126 10777	100pF ONLY CCD66/00S
2415	4822 122 33195	100pF 10% 50V

RESISTORS

3400	4822 052 10478▲	4Ω7 5% 0,33W
3401	4822 116 52263	2k7 5% 0,5W
3404	4822 052 10108▲	1Ω 5% 0,33W
3405	4822 052 10229▲	22Ω 5% 0,33W
3406	4822 116 52175	100Ω 5% 0,5W
3407	4822 116 52175	100Ω 5% 0,5W
3408	4822 050 11002	1k 1% 0,4W
3409	4822 050 11002	1k 1% 0,4W
3410	4822 050 11002	1k 1% 0,4W
3411	4822 116 52175	100Ω 5% 0,5W
3412	4822 116 52175	100Ω 5% 0,5W
3413	4822 116 52256	2k2 5% 0,5W
3414	4822 116 52296	6k8 5% 0,5W
3415	4822 116 52296	6k8 5% 0,5W
3417	4822 050 11002	1k 1% 0,4W
3418	4822 116 52215	220Ω 5% 0,5W
3418	4822 116 52176	10Ω ONLY CCD66/00S
3419	4822 116 52263	2k7 5% 0,5W
3420	4822 116 52263	2k7 5% 0,5W

DIODES

6400	4822 130 34195	BZX79-C15
6401	4822 130 34173	BZX79-C5V6
6402	4822 130 34173	C5V6 ONLYCCD66/00S
6403	4822 130 30621	1N4148

TRANSISTORS & IC's

7300	4822 130 62952	BDX53AFI
7301	4822 130 63614	BDX54AFI
7303	4822 209 10263	4052B

AM - STEREO only Japan version

CAPACITORS

2177	4822 122 33891	3,3nF 10% 63V
2178	4822 122 33891	3,3nF 10% 63V
2181	4822 124 40244	2,2µF 20% 63V
2182	4822 124 40244	2,2µF 20% 63V
2212	4822 122 32542	47nF 10% 63V
2214	4822 122 32542	47nF 10% 63V
2232	4822 121 51252	470nF 5% 63V
2233	5322 122 32452	47pF
2234	4822 121 51387	10nF 20% 16V
2235	4822 122 33177	10nF 20% 50V
2236	4822 124 40433	47µF 20% 25V
2237	5322 122 34123	1nF 10% 50V
2238	5322 122 34123	1nF 10% 50V
2239	5322 122 31647	1nF 10% 63V
2240	4822 124 40242	1µF 20% 63V
2241	4822 124 22403	10µF 20% 16V
2242	4822 124 40433	47µF 20% 25V
2243	4822 124 40248	10µF 20% 63V
2244	5322 122 34123	1nF 10% 50V
2245	4822 124 40242	1µF 20% 63V
2246	4822 122 32927	220nF +80-20% 50V
2247	4822 124 40248	10µF 20% 63V
2248	4822 122 33177	10nF 20% 50V
2249	4822 122 33177	10nF 20% 50V

RESISTORS

3226	4822 117 10834	47k 1% 0,1W
3228	4822 117 10834	47k 1% 0,1W
3242	4822 051 10008	0Ω 5% 0,25W
3244	4822 051 20332	3k3 5% 0,1W
3246	4822 116 52215	220Ω 5% 0,5W
3247	4822 117 10834	47k 1% 0,1W
3248	4822 116 52256	2k2 5% 0.5W
3249	4822 051 20104	100k 5% 0,1W

COILS

5240	4822 156 30779	AM
5241	4822 242 81722	Coil

DIODES

6240	4822 130 30621	1N4148
6241	4822 130 30621	1N4148
6242	4822 130 30621	1N4148

TRANSISTORS & IC's

7240	4822 214 52187	DECODER MC 13022DW
7241	5322 209 14481	HEF4053BT
7242	5322 130 42136	BC848C
7243	4822 130 42513	BC858C

TUNER UNIT MINI 94

MISCELLANEOUS

1101	4822 210 10492	FE415-G11
1101	4822 210 10495	FE337-J07 only/26
1110	4822 267 10283	FM socket
1110	4822 265 20598	FM socket only/26

CAPACITORS

2101	5322 122 34099	470pF 10% 63V
2102	5322 122 32268	470pF 10% 50V
2103	4822 124 40433	47µF 20% 25V
2104	4822 121 42408	220nF 5% 63V
2105	5322 122 32654	22nF 10% 63V
2108	5322 122 32654	22nF 10% 63V
2109	5322 122 32654	22nF 10% 63V
2110	5322 122 32654	22nF 10% 63V
2111	4822 122 32927	220nF +80-20% 50V
2112	5322 122 32654	22nF 10% 63V
2113	5322 122 32661	56pF 5% 50V
2114	5322 124 41431	22µF 20% 35V
2115	4822 124 40239	0,47µF 20% 63V
2116	5322 121 42386	100nF 5% 63V
2117	4822 122 33336	8,2nF 10% 50V
2118	4822 122 33336	8,2nF 10% 50V
2119	4822 124 40244	2,2µF 20% 63V
2120	4822 124 40244	2,2µF 20% 63V
2121	4822 124 40196	220µF 20% 16V
2123	4822 124 40246	4,7µF 20% 63V
2124	4822 124 40246	4,7µF 20% 63V
2125	4822 122 33177	10nF 20% 50V
2126	4822 122 31782	15000pF 10% 50V
2127	5322 122 31863	330pF 5% 50V
2128	5322 116 80853	560pF 5% 63V
2129	4822 124 40242	1µF 20% 63V
2131	4822 124 40248	10µF 20% 63V
2140	4822 125 60102	TRIM CAP
2141	4822 125 60101	TRIM CAP
2143	5322 122 32531	100P 5%
2142	4822 125 60102	5P2-30P 100V
2144	4822 121 42408	220nF 5% 63V
2145	4822 121 51263	510pF 1% 400V
2145	4822 121 51381	560pF 400V only/26
2146	4822 121 70082	430pF 1% 400V
2147	5322 122 32654	22nF 10% 63V
2148	5322 122 32452	47pF 5% 63V
2149	4822 122 33177	10nF 20% 50V
2150	5322 122 32654	22nF 10% 63V
2151	5322 122 34099	470pF 10% 63V
2152	4822 124 40242	1µF 20% 63V
2153	5322 122 34099	470pF 10% 63V
2154	5322 122 32481	15pF 5% 50V
2155	5322 122 32965	18pF 5%NPO 50V
2156	4822 124 40433	47µF 20% 25V
2158	5322 126 10223	4,7nF 10% 63V
2159	5322 126 10223	4,7nF 10% 63V
2160	4822 124 41631	1,5µF 50V
2161	4822 122 32927	220nF +80-20% 50V
2162	4822 126 11585	22nF +80-20% 25V
2196	5322 122 32448	10pF 5% 50V
2197	4822 122 33804	27pF 5% only/26
2210	4822 124 41643	100µF 16V 20%
2215	5322 122 32268	470pF 10% 50V
2216	5322 122 32268	470pF 10% 50V
2221	5322 122 32268	470pF 10% 50V
2222	5322 122 32268	470pF only/26
2224	4822 122 33575	220pF 5%NPO 50V
2225	4822 122 33575	220pF 5%NPO 50V

RESISTORS

3101	4822 052 10478▲	4Ω7 5% 0,33W
3102	4822 051 20224	220k 5% 0,1W
3104	4822 051 20154	150k 5% 0,1W
3105	4822 051 20562	5k6 5% 0,1W
3106	4822 051 20829	82Ω 5% 0,1W
3107	4822 051 20008	0Ω JUMPER
3113	4822 053 10221▲	220Ω 5%
3114	4822 051 20332	3k3 5% 0,1W
3115	4822 051 20391	390Ω 5% 0,1W
3116	4822 051 20478	4Ω7 5% 0,1W
3117	4822 051 20331	330Ω 5% 0,1W
3118	4822 050 22201▲	220Ω 1% 0,6W
3119	4822 051 20008	0Ω only/26
3120	4822 052 10229▲	22Ω 5% 0,33W
3121	4822 051 20272	2k7 5% 0,1W
3122	4822 051 20562	5k6 5% 0,1W
3123	4822 051 20223	22k 5% 0,1W
3124	4822 117 10833	10k 1% 0,1W
3125	4822 100 11213	22k 30%lin 0,1W
3126	4822 051 20123	12k 5% 0,1W
3127	4822 051 20182	1k8 5% 0,1W
3128	4822 051 20182	1k8 5% 0,1W
3129	4822 117 10833	10k 5%
3129	4822 051 20153	15k 5% only/26
3130	4822 116 52283	4k7 5% 0,5W
3131	4822 100 11319	4k7 30%lin 0,1W
3132	4822 117 10833	10k 1% 0,1W
3133	4822 051 20008	0Ω JUMPER
3134	4822 116 52289	5k6 5% 0,5W
3135	4822 051 10008	0Ω 5% 0,25W

3137	4822 116 52283	4k7 5% 0,5W
3138	4822 116 83922▲	150Ω 5% 1W
3139	4822 051 20008	0Ω JUMPER
3140	4822 051 20821	820Ω 5%
3141	4822 051 20182	1k8 5%
3142	4822 051 20472	4k7 5% 0,1W
3143	4822 051 20821	820Ω 5% 0,1W
3144	4822 051 20331	330Ω 5% 0,1W
3145	4822 051 20271	270Ω 5% 0,1W
3147	4822 116 52289	5k6 5% 0,5W
3147	4822 050 22201	220R only/26
3148	4822 051 20104	100k 5% 0,1W
3149	4822 051 20472	4k7 5% 0,1W
3150	4822 050 25601▲	560Ω 1% 0,6W
3151	4822 116 52283	4k7 5% 0,5W
3152	4822 117 10833	10k 1% 0,1W
3153	4822 051 20008	0Ω only/26
3154	4822 051 20008	0Ω only/26
3155	4822 050 22201▲	220Ω 1% 0,6W
3156	4822 051 20153	15k 5% 0,1W
3157	4822 051 20472	4k7 5% 0,1W
3158	4822 116 52283	4k7 5% 0,5W
3159	4822 051 20104	100k 5% 0,1W
3160	4822 051 20104	100k 5% 0,1W
3161	4822 051 20472	4k7 5% only/26
3162	4822 050 22701▲	270Ω 1% 0,6W
3163	4822 117 10833	10k 1% 0,1W
3164	4822 051 10473	47k 2% 0,25W
3165	4822 050 11002	1k 1% 0,4W
3166	4822 050 11002	1k 1% 0,4W
3167	4822 050 11002	1k 1% 0,4W
3168	4822 051 20008	0Ω JUMPER
3169	4822 051 20153	15k 5% only/26
3170	4822 117 10833	10k 1% 0,1W
3171	4822 051 20223	22k 5% 0,1W
3172	4822 051 20472	4k7 5% 0,1W
3173	4822 051 20223	22k 5% 0,1W
3186	4822 116 52233	10k 5%
3187	4822 117 10833	10k 5%
3190	4822 051 20479	47Ω 5% 0,1W
3194	4822 051 20472	4k7 5% 0,1W
3196	4822 051 20008	0Ω JUMPER
3197	4822 051 20008	0Ω JUMPER
3198	4822 117 10833	10k 1% 0,1W
3200	4822 051 20008	0Ω JUMPER
3202	4822 051 20008	0Ω JUMPER
3223	4822 051 20474	470k 5% 0,1W
3225	4822 050 11002	1k 1% 0,4W
3233	4822 051 10102	1k 2% 0,25W
3236	4822 051 20008	0Ω JUMPER
3239	4822 051 20274	270k 5% 0,1W
3240	4822 051 20182	1k8 5%
3241	4822 051 20008	0Ω JUMPER

COILS

5103	4822 242 72342	CST 10,7Mc
5104	4822 157 63029	Coil
5104	4822 156 30779	Coil only/26
5105	4822 157 63904	Coil
5106	4822 157 71044	Coil
5107	4822 157 71094	MW AERIAL COIL
5107	4822 157 63035	MW AERIAL only/26
5108	4822 157 63912	AM OSC Coil
5108	4822 157 63836	AM OSC only/26
5109	4822 157 71093	LW AERIAL COIL
5110	4822 242 71878	SFZ450A4
5111	4822 242 81248	CSB456F15
5112	4822 242 72976	LN-G15-50J
5113	4822 242 72342	CST 10,7Mc
5114	4822 157 51503	Coil
5128	4822 242 81714	Cristal

DIODES

6101	4822 130 34174	BZX79-C4V7
6102	4822 130 83075	HN1V02H
6103	4822 130 30621	1N4148 only/26
6109	4822 130 30621	1N4148
6110	4822 130 30621	1N4148
6122	4822 130 30621	1N4148 only/26
6123	4822 130 30621	1N4148 only/26

TRANSISTORS & IC's

7103	4822 209 31001	LA1851N
7104	5322 130 60068	BC558C
7105	4822 209 30178	LC7218
7106	4822 130 41327	BC327-40
7107	5322 130 41982	BC848B
7108	4822 130 44196	BC548C
7109	4822 130 44196	BC548C
7110	5322 130 44779	BC338-40
7111	5322 130 41982	BC848B
7112	4822 130 60163	2SC1047
7113	4822 130 44196	BC548C
7114	5322 130 44779	BC338-40
7115	4822 130 41024	BF245B
7116	4822 130 60163	2SC1047
7120	4822 130 44196	BC548C
7125	4822 130 44197	BC558B

TUNER UNIT ECO4-VA

MISCELLANEOUS

1101	4822 267 10283	SOCKET COAX IEC 75Ω
1105	4822 265 31184	JST CONN. FRAME ANT.

CAPACITORS

2100	4822 122 33195	100pF 10% 50V
2104	4822 122 33195	100pF 10% 50V
2107	5322 122 34123	1nF 10% 50V
2110	5322 122 32658	22pF 5% 50V
2112	4822 122 33496	100nF 10% 63V
2113	4822 125 50355	TRIMHz AP. 4-20P
2114	5322 122 32531	100pF 5% 50V
2115	4822 125 60101	3P0-11P N450 100V
2120	5322 122 32268	470pF 10% 50V
2121	5322 122 32481	15pF 5% 50V
2122	5322 122 34123	1nF 10% 50V
2123	5322 122 34123	1nF 10% 50V
2124	4822 121 51387	10nF 20% 16V
2125	5322 122 31946	27pF 10% 50V
2126	4822 122 33496	100nF 10% 63V
2129	4822 121 43705	390pF 1% 160V
2134	4822 122 33197	1nF 10% 50V
2135	4822 121 70245	560pF 1% 160V
2136	5322 122 31946	27pF 10% 50V
2138	5322 122 32659	33pF 5% 50V
2139	4822 122 33175	2,2nF 20% 50V
2141	4822 124 40244	2,2μF 20% 63V
2142	4822 124 40242	1μF 20% 63V
2143	4822 124 40239	0,47μF 20% 63V
2144	4822 124 40239	0,47μF 20% 63V
2147	4822 122 33177	10nF 20% 50V
2150	4822 124 40248	10μF 20% 63V
2151	4822 124 40248	10μF 20% 63V
2154	4822 122 33893	18nF 10% 63V
2155	4822 122 33893	18nF 10% 63V
2160	4822 124 40242	1μF 20% 63V
2161	4822 124 40242	1μF 20% 63V
2167	4822 122 33496	100nF 10% 63V
2169	5322 122 31863	330pF 5% 50V
2170	4822 126 11714	4,7nF 20%
2171	5322 126 10223	4,7nF 10% 63V
2172	4822 124 41631	1,5μF 50V
2173	4822 124 40433	47μF 20% 25V
2177	4822 126 12882	100nF +80-20% 50V
2178	4822 122 33197	1nF 10% 50V
2179	4822 122 33195	100pF 10% 50V
2180	5322 122 31946	27pF 10% 50V
2181	4822 122 32139	12pF 2% 63V
2183	4822 122 33496	100nF 10% 63V
2184	4822 124 41584	100μF 20% 10V
2185	4822 122 33496	100nF 10% 63V
2186	5322 122 34123	1nF 10% 50V

RESISTORS

3106	4822 051 20104	100k 5% 0,1W
3107	4822 051 20222	2k2 5% 0,1W
3108	4822 051 20104	100k 5% 0,1W
3109	4822 051 20222	2k2 5% 0,1W
3112	4822 116 52176	10Ω 5% 0,5W
3119	4822 116 52224	470Ω 5% 0,5W
3120	4822 116 52289	5k6 5% 0,5W
3121	4822 051 20104	100k 5% 0,1W
3122	4822 051 20471	470Ω 5% 0,1W
3123	4822 051 20223	22k 5% 0,1W
3124	4822 116 52256	2k2 5% 0,5W
3125	4822 051 20472	4k7 5% 0,1W
3128	4822 117 10833	10k 1% 0,1W
3129	4822 051 20472	4k7 5% 0,1W
3132	4822 116 52283	4k7 5% 0,5W
3141	4822 116 52215	220Ω 5% 0,5W
3142	4822 051 20222	2k2 5% 0,1W
3144	4822 117 10833	10k 1% 0,1W
3147	4822 051 20184	180k 5% 0,1W
3148	4822 100 11163	100k 30%LIN 0,1W
3149	4822 051 20563	56k 5% 0,1W
3151	4822 116 52243	1k5 5% 0,5W
3153	4822 051 20683	68k 5% 0,1W
3156	4822 116 52233	10k 5% 0,5W
3157	4822 051 20273	27k 5% 0,1W
3159	4822 051 20563	56k 5% 0,1W
3162	4822 050 11002	1k 1% 0,4W
3163	4822 050 11002	1k 1% 0,4W
3164	4822 116 52283	4k7 5% 0,5W
3165	4822 116 52283	4k7 5% 0,5W
3166	4822 051 20101	100Ω 5% 0,1W
3167	4822 051 20008	0Ω JUMP. (0805)
3170	4822 116 52283	4k7 5% 0,5W
3171	4822 051 20101	100Ω 5% 0,1W
3172	4822 051 20472	4k7 5% 0,1W
3173	4822 116 52244	15k 5% 0,5W
3174	4822 116 52233	10k 5% 0,5W
3175	4822 051 20104	100k 5% 0,1W
3177	4822 116 52233	10k 5% 0,5W
3180	4822 051 20333	33k 5% 0,1W

3181	4822 116 52234	100k 5% 0,5W
3183	4822 051 20223	22k 5% 0,1W
3184	4822 051 20223	22k 5% 0,1W
3186	4822 051 20104	100k 5% 0,1W
3188	4822 051 10102	1k 2% 0,25W
3189	4822 116 52249	1k8 5% 0,5W
3190	4822 116 52249	1k8 5% 0,5W
3191	4822 116 52249	1k8 5% 0,5W
3192	4822 116 52249	1k8 5% 0,5W
3193	4822 116 52256	2k2 5% 0,5W
3194	4822 116 52219	330Ω 5% 0.5W
3195	4822 116 52219	330Ω 5% 0.5W
3197	4822 116 52219	330Ω 5% 0,5W
3206	4822 116 52215	220Ω 5% 0,5W
3211	4822 051 10008	0Ω 5% 0,25W
3212	4822 051 10008	0Ω 5% 0,25W
3213	4822 051 10008	0Ω 5% 0,25W
3221	4822 051 20008	0Ω JUMP. (0805)
3222	4822 051 20008	0Ω JUMP. (0805)
3224	4822 051 20008	0Ω JUMP. (0805)
3226	4822 051 20008	0Ω JUMP. (0805)
3228	4822 051 10008	0Ω 5% 0,25W
3229	4822 051 20008	0Ω JUMP. (0805)
3231	4822 051 20008	0Ω JUMP. (0805)
3235	4822 051 20008	0Ω JUMP. (0805)
3236	4822 051 10008	0Ω 5% 0,25W
3237	4822 051 10008	0Ω 5% 0,25W
3238	4822 051 20008	0Ω JUMP. (0805)
3240	4822 051 10479	47Ω 2% 0,25W
3241	4822 051 20008	0Ω JUMP. (0805)
3242	4822 051 10008	0Ω 5% 0,25W
3243	4822 051 20008	0Ω JUMP. (0805)
3244	4822 [illegible]1 20008	0Ω JUMP. (0805)
3245	4822 051 20008	0Ω JUMP. (0805)
3246	4822 051 10008	0Ω 5% 0,25W
3247	4822 051 10008	0Ω 5% 0,25W
3248	4822 051 10008	0Ω 5% 0,25W

COILS

5107	4822 157 71094	MW ANT.COIL, 3-BAND
5107	4822 157 63835	MW ANT.COIL, 2-BAND
5108	4822 157 71093	LW ANT. COIL
5109	4822 156 30947	RF COIL 1,5 TURNS
5120	4822 156 30947	RF COIL 1,5 TURNS
5122	4822 157 60517	OSC. COIL LW
5123	4822 157 60517	OSC. COIL MW
5125	4822 157 61898	0.47µH
5140	4822 158 60511	AM-IF TER 450kHZ
5142	4822 157 70302	AM-IF TER 450kHZ

5143	4822 242 70665	CER. TER 10,7MHz
5144	4822 242 70665	CER. TER 10,7MHz
5145	4822 242 81362	CER. DISCRIMINATOR
5170	4822 242 72976	CER. RESON. 7,2MHz

DIODES

6105	4822 130 83075	HN1V02H TUNING DIODE
6109	4822 130 82833	1SV228 TUNING DIODE
6122	4822 130 30621	1N4148
6124	4822 130 82833	1SV228 TUNING DIODE
6140	4822 130 30621	1N4148
6154	4822 130 30621	1N4148
6170	4822 130 30621	1N4148
6174	4822 130 34233	BZX79-B5V1

TRANSISTORS & IC's

7102	4822 130 42615	BC817-40
7104	5322 130 42136	BC848C
7105	4822 130 60093	2SA838B
7120	4822 130 60163	2SC1047
7121	5322 130 42136	BC848C
7123	5322 130 42136	BC848C
7128	5322 130 42136	BC848C
7140	4822 209 32701	TEA5712T/N2 (RF IC)
7156	4822 130 41344	BC337-40
7157	4822 130 41344	BC337-40
7168	5322 130 41983	BC858B
7170	5322 130 42136	BC848C
7171	5322 130 42136	BC848C
7172	5322 209 11517	PC74HCU04T INVERTER
7173	4822 209 31998	LC7218M SYNTHESIZER
7174	5322 130 41983	BC858B
7179	5322 130 42136	BC848C

CD MINI BRICK

MISCELLANEOUS

1002	4822 242 73557	CER RES 8.467MHz
1020	4822 071 51601⚠	FUSE 160MA
1021	4822 071 51601⚠	FUSE 160MA
1570	4822 242 80997	RESONATOR 16.93 MHz
1700	4822 242 72527	CER RES 4MHz

CAPACITORS

2000	5322 122 31865	1,5nF 10% 63V
2001	5322 116 80853	560pF 5% 63V
2003	4822 122 31173	220pF 10% 500V
2004	4822 122 31173	220pF 10% 500V
2005	4822 122 31173	220pF 10% 500V
2006	4822 122 31173	220pF 10% 500V
2007	4822 122 31173	220pF 10% 500V
2008	4822 122 31173	220pF 10% 500V
2009	4822 122 33496	100nF 10% 63V
2010	5322 124 21643	22µF 20% 40V
2011	4822 122 33496	100nF 10% 63V
2012	4822 124 40433	47µF 20% 25V
2015	5322 124 21643	22µF 20% 40V
2016	4822 122 33496	100nF 10% 63V
2018	4822 122 33496	100nF 10% 63V
2019	4822 122 33809	22nF 20% 50V
2040	5322 122 32654	22nF 10% 63V
2041	4822 126 10326	180pF 5% 63V
2042	5322 124 21643	22µF 20% 40V
2043	5322 122 31863	330pF 5% 50V
2044	4822 126 10326	180pF 5% 63V
2045	5322 122 32452	47pF 5% 63V
2046	5322 122 32452	47pF 5% 63V
2047	5322 122 32531	100pF 5% 50V
2048	5322 122 32965	18pF 5%NPO 50V
2049	4822 126 10326	180pF 5% 63V
2050	4822 126 10326	180pF 5% 63V
2051	5322 122 31863	330pF 5% 50V
2052	5322 124 21643	22µF 20% 40V
2060	4822 122 32542	47nF 10% 63V
2061	4822 122 33496	100nF 10% 63V
2064	4822 122 33342	33nF 10% 63V
2065	4822 122 32542	47nF 10% 63V
2066	4822 122 33175	2,2nF 20% 50V
2070	4822 122 32627	2.7nF 10% 50V
2071	4822 122 33496	100nF 10% 63V
2072	4822 126 10326	180pF 5% 63V
2080	4822 122 33496	100nF 10% 63V
2082	4822 122 33496	100nF 10% 63V
2084	4822 126 10326	180pF 5% 63V
2085	4822 122 33496	100nF 10% 63V
2086	5322 126 10465	3,9nF 10% 63V
2101	5322 122 32452	47pF 5% 63V
2102	4822 122 33175	2,2nF 20% 50V
2103	4822 124 40849	330µF 20% 16V
2104	4822 122 33496	100nF 10% 63V
2105	5322 121 42661	330nF 5% 63V
2106	4822 122 33496	100nF 10% 63V
2107	4822 124 41584	100µF 20% 10V
2108	4822 122 33809	22nF 20% 50V
2109	4822 124 40242	1µF 20% 63V
2110	5322 122 32659	33pF 5% 50V
2111	5322 121 42386	100nF 5% 63V
2112	4822 122 33496	100nF 10% 63V
2116	4822 124 40242	1µF 20% 63V
2117	5322 126 10223	4,7nF 10% 63V
2118	5322 126 10223	4,7nF 10% 63V
2119	4822 124 41584	100µF 20% 10V
2120	4822 122 33496	100nF 10% 63V
2121	4822 122 33496	100nF 10% 63V
2122	4822 124 40849	330µF 20% 16V
2123	4822 122 33496	100nF 10% 63V
2140	4822 122 33496	100nF 10% 63V
2141	4822 122 32542	47nF 10% 63V
2300	5322 122 31863	330pF 5% 50V
2301	4822 124 40433	47µF 20% 25V
2302	4822 124 40246	4,7µF 20% 63V
2303	4822 122 33216	270pF 5% 50V
2304	4822 124 40433	47µF 20% 25V
2306	4822 122 33496	100nF 10% 63V
2309	4822 122 33216	270pF 5% 50V
2310	5322 122 31863	330pF 5% 50V
2311	4822 124 40246	4.7µF 20% 63V
2312	4822 122 33219	1,8nF 10% 50V
2313	4822 122 33219	1,8nF 10% 50V
2500	4822 124 40201	1000µF 20% 16V
2501	4822 122 33496	100nF 10% 63V
2502	4822 124 41853	1000µF 16V
2503	4822 122 32542	47nF 10% 63V
2504	4822 122 32542	47nF 10% 63V
2550	4822 122 33175	2,2nF 20% 50V
2610	4822 122 32542	47nF 10% 63V
2611	4822 122 32542	47nF 10% 63V
2612	4822 122 33496	100nF 10% 63V
2702	4822 124 40433	47µF 20% 25V
2703	4822 122 33809	22nF 20% 50V
2704	4822 122 33175	2,2nF 20% 50V

RESISTORS

3000	4822 050 21003	10k	1%	0,6W
3001	4822 050 21003	10k	1%	0,6W
3002	4822 050 21003	10k	1%	0,6W
3003	4822 050 21003	10k	1%	0,6W
3004	4822 050 21003	10k	1%	0,6W
3005	4822 050 21003	10k	1%	0,6W
3006	4822 051 20103	10k	5%	0,1W
3007	4822 052 10338▲	3Ω3	5%	0,33W
3008	4822 052 10338▲	3Ω3	5%	0,33W
3009	4822 051 20105	1M	5%	0,1W
3010	4822 051 20103	10k	5%	0,1W
3011	4822 051 20103	10k	5%	0,1W
3012	4822 051 10102	1k	2%	0,25W
3013	4822 051 10102	1k	2%	0,25W
3014	4822 052 10478▲	4Ω7	5%	0,33W
3015	4822 050 21002	1k	1%	0,6W
3016	4822 050 21002	1k	1%	0,6W
3017	4822 051 10102	1k	2%	0,25W
3040	4822 051 10101	100Ω	2%	0,25W
3041	4822 051 20393	39k	5%	0,1W
3042	4822 051 20334	330k	5%	0,1W
3043	4822 051 20303	30k	5%	0,1W
3044	4822 051 10102	1k	2%	0,25W
3045	4822 051 20101	100Ω	5%	0,1W
3046	4822 051 10102	1k	2%	0,25W
3047	4822 051 20434	430k	5%	0,1W
3048	4822 051 20101	100Ω	5%	0,1W
3049	4822 050 24301	430Ω	1%	0,6W
3050	4822 051 20434	430k	5%	0,1W
3051	4822 051 20182	1k8	5%	0,1W
3052	4822 051 20182	1k8	5%	0,1W
3053	4822 051 20392	3k9	5%	0,1W
3054	4822 051 20101	100Ω	5%	0,1W
3055	4822 051 20124	120k	5%	0,1W
3056	4822 050 21204	120k	1%	0,6W
3057	4822 050 25603	56k	1%	0,6W
3058	4822 050 21002	1k	1%	0,6W
3060	4822 117 10036	7k5	1%	0,1W
3061	4822 051 20682	6k8	5%	0,1W
3062	4822 116 52244	15k	5%	0,5W
3063	4822 051 20103	10k	5%	0,1W
3064	4822 050 21503	15k	1%	0,125W
3065	4822 052 10229▲	22Ω	5%	0,33W
3066	4822 052 10108▲	1Ω	5%	0,33W
3067	4822 052 10108▲	1Ω	5%	0,33W
3070	4822 051 20153	15k	5%	0,1W
3071	4822 051 20103	10k	5%	0,1W
3072	4822 050 26802	6k8	1%	0,6W
3073	4822 052 10229▲	22Ω	5%	0,33W
3074	4822 116 52244	15k	5%	0,5W
3075	4822 050 21003	10k	1%	0,6W
3080	4822 051 20682	6k8	5%	0,1W
3081	4822 050 24702	4k7	1%	0,6W
3082	4822 051 20153	15k	5%	0,1W
3083	4822 052 10108	1Ω	5%	0,33W
3084	4822 052 10108	1Ω	5%	0,33W
3085	4822 050 21003	10k	1%	0,6W
3086	4822 052 10229▲	22Ω	5%	0,33W
3087	4822 116 52244	15k	5%	0,5W
3100	4822 050 22202	2k2	1%	0,6W
3101	4822 051 20223	22k	5%	0,1W
3102	4822 051 20223	22k	5%	0,1W
3103	4822 052 10338▲	3Ω3	5%	0,33W
3105	4822 052 10338▲	3Ω3	5%	0,33W
3106	4822 051 10102	1k	2%	0,25W
3109	4822 051 20222	2k2	5%	0,1W
3110	4822 051 20105	1M	5%	0,1W
3111	4822 052 10229▲	22Ω	5%	0,33W
3112	4822 050 22205	2M2	1%	0,6W
3117	4822 051 20182	1k8	5%	0,1W
3118	4822 051 20182	1k8	5%	0,1W
3119	4822 051 10561	560Ω	2%	0,25W
3140	4822 116 52234	100k	5%	0,5W
3141	4822 051 20104	100k	5%	0,1W
3142	4822 050 24703	47k	1%	0,6W
3143	4822 052 10229▲	22Ω	5%	0,33W
3144	4822 051 20223	22k	5%	0,1W
3146	4822 050 21003	10k	1%	0,6W
3147	4822 051 20392	3k9	5%	0,1W
3148	4822 051 20473	47k	5%	0,1W
3300	4822 051 20223	22k	5%	0,1W
3301	4822 051 20153	15k	5%	0,1W
3302	4822 051 20332	3k3	5%	0,1W
3303	4822 050 21803	18k	1%	0,6W
3304	4822 051 20123	12k	5%	0,1W
3305	4822 052 10229▲	22Ω	5%	0,33W
3306	4822 052 10229▲	22Ω	5%	0,33W
3307	4822 051 20332	3k3	5%	0,1W
3308	4822 051 20123	12k	5%	0,1W
3309	4822 051 20223	22k	5%	0,1W
3310	4822 051 20153	15k	5%	0,1W
3311	4822 051 20183	18k	5%	0,1W
3312	4822 050 22203	22k	1%	0,6W
3313	4822 051 20223	22k	5%	0,1W
3314	4822 050 21002	1k	1%	0,6W
3315	4822 050 21002	1k	1%	0,6W
3320	4822 116 83933	15k	1%	0,1W
3321	4822 116 83933	15k	1%	0,1W
3322	4822 116 83933	15k	1%	0,1W
3323	4822 116 83933	15k	1%	0,1W

3325	4822 116 83933	15k	1%	0,1W
3326	4822 116 83933	15k	1%	0,1W
3327	4822 116 83933	15k	1%	0,1W
3328	4822 116 83933	15k	1%	0,1W
3501	4822 052 10108▲	1Ω	5%	0,33W
3502	4822 052 10108▲	1Ω	5%	0,33W
3550	4822 051 20561	560Ω	5%	0,1W
3551	4822 051 10102	1k	2%	0,25W
3552	4822 051 20223	22k	5%	0,1W
3553	4822 051 10102	1k	2%	0,25W
3610	4822 051 20123	12k	5%	0,1W
3611	4822 116 52303	8k2	5%	0,5W
3612	4822 051 20123	12k	5%	0,1W
3613	4822 051 20123	12k	5%	0,1W
3614	4822 051 20123	12k	5%	0,1W
3615	4822 052 10108▲	1Ω	5%	0,33W
3616	4822 052 10108▲	1Ω	5%	0,33W
3617	4822 052 10229▲	22Ω	5%	0,33W
3700	4822 051 20224	220k	5%	0,1W
3701	4822 052 10338▲	3Ω3	5%	0,33W
3706	4822 051 20103	10k	5%	0,1W
3707	4822 051 20103	10k	5%	0,1W
3708	4822 051 20103	10k	5%	0,1W
3710	4822 051 20103	10k	5%	0,1W
3711	4822 051 20332	3k3	5%	0,1W
3713	4822 051 20103	10k	5%	0,1W
3714	4822 051 20103	10k	5%	0,1W
3715	4822 051 20332	3k3	5%	0,1W
3716	4822 051 20103	10k	5%	0,1W
3717	4822 051 20103	10k	5%	0,1W
3718	4822 051 20103	10k	5%	0,1W
3719	4822 051 20103	10k	5%	0,1W
3720	4822 051 20103	10k	5%	0,1W
3721	4822 051 20103	10k	5%	0,1W
3722	4822 051 10102	1k	2%	0,25W
3723	4822 051 10102	1k	2%	0,25W
3724	4822 051 10102	1k	2%	0,25W
4000	4822 051 10008	0Ω	5%	0,25W
4001	4822 051 10008	0Ω	5%	0,25W
4002	4822 051 10008	0Ω	5%	0,25W
4003	4822 051 10008	0Ω	5%	0,25W
4004	4822 051 10008	0Ω	5%	0,25W
4104	4822 051 10008	0Ω	5%	0,25W
4105	4822 051 10008	0Ω	5%	0,25W
4106	4822 051 10008	0Ω	5%	0,25W
4107	4822 051 10008	0Ω	5%	0,25W
4108	4822 051 10008	0Ω	5%	0,25W
4109	4822 051 10008	0Ω	5%	0,25W
4200	4822 051 10008	0Ω	5%	0,25W
4302	4822 051 10008	0Ω	5%	0,25W
4600	4822 051 10008	0Ω	5%	0,25W
4701	4822 051 10008	0Ω	5%	0,25W

DIODES

6103	4822 130 30621	1N4148
6550	4822 130 31981	BZX79-C3V9

TRANSISTORS & IC's

7000	4822 209 31064	TDA1301T/N1
7040	4822 130 60887	BF840
7041	5322 130 41982	BC848B
7042	5322 130 41983	BC858B
7043	5322 130 41982	BC848B
7044	5322 130 41982	BC848B
7060	4822 209 72587	TCA0372DP2
7080	4822 209 72587	TCA0372DP2
7101	4822 209 32036	UM6264BM-10L
7102	4822 209 30388	SAA7341GP
7140	5322 130 42012	BC858
7141	4822 130 61207	BC848
7300	4822 209 83274	NJM4560D
7301	4822 209 83274	NJM4560D
7500	4822 209 80891▲	78M05CT
7550	5322 130 42012	BC858
7660	4822 209 72587	TCA0372DP2
7700	4822 900 10318	68HC05C8/SERVO-S22

CD SHORT LOADER

MISCELLANEOUS

1810	4822 276 13503	Switch

CAPACITORS

2752	5322 122 32531	100pF 5% 50V
2753	5322 122 32531	100pF 5% 50V
2762	5322 122 32658	22pF 5% 50V
2763	5322 122 32658	22pF 5% 50V
2764	5322 122 32658	22pF 5% 50V
2769	4822 124 80115	4,7µF 20% 25V
2770	4822 124 80115	4,7µF 20% 25V
2802	4822 122 33064	330nF 80% 25V
2803	4822 122 33515	82pF 5% 63V
2804	4822 122 33515	82pF 5% 63V
2805	5322 122 33538	150pF 2% 63V
2806	5322 122 31946	27pF 10% 50V
2807	5322 122 32452	47pF 5% 63V
2808	5322 122 32452	47pF 5% 63V
2809	5322 122 32452	47pF 5% 63V
2810	5322 122 32481	15pF 5% 50V
2811	5322 122 33538	150pF 2% 63V
2814	4822 126 12339	2,2nF 10% Y5Ω
2818	4822 124 80483	47µF 20% 6,3V
2820	5322 116 80853	560pF 5% 63V
2821	4822 126 10326	180pF 5% 63V
2822	5322 122 31863	330pF 5% 50V
2823	5322 122 31865	1,5nF 10% 63V
2824	4822 126 10326	180pF 5% 63V
2825	4822 122 33575	220pF 5%NPO 50V
2826	4822 122 33575	220pF 5%NPO 50V
2827	4822 122 33575	220pF 5%NPO 50V
2828	4822 122 33575	220pF 5%NPO 50V
2829	4822 122 33575	220pF 5%NPO 50V
2830	4822 122 33575	220pF 5%NPO 50V
2831	4822 124 80483	47µF 20% 6,3V
2833	4822 124 80483	47µF 20% 6,3V
2834	5322 122 32654	22nF 10% 63V
2836	4822 126 13098	5,6nF 20% 16V
2837	4822 122 10459	560pF 10% 50V
2838	4822 122 33496	100nF 10% 63V
2839	4822 121 51387	10nF 20% 16V
2840	4822 122 10576	1,8nF 10% 16V
2843	5322 124 41948	470N+-20% 50V
2847	4822 124 80934	33µF 20% 25V
2848	4822 124 80483	47µF 20% 6,3V
2849	4822 124 40433	47µF 20% 25V
2850	4822 124 80115	4,7µF 20% 25V
2851	4822 121 51387	10nF 20% 16V
2852	4822 122 33496	100nF 10% 63V
2853	5322 121 42386	100nF 5% 63V
2854	5322 122 32531	100pF 5% 50V
2856	5322 121 42661	330nF 5% 63V
2857	5322 122 32452	47pF 5% 63V
2858	5322 122 32654	22nF 10% 63V
2859	4822 122 33496	100nF 10% 63V
2860	4822 124 80483	47µF 20% 6,3V
2861	5322 122 32658	22pF 5% 50V
2862	5322 122 32661	56pF 5% 50V
2863	4822 122 33342	33nF 10% 63V
2864	4822 124 80483	47µF 20% 6,3V
2865	4822 124 80483	47µF 20% 6,3V
2866	4822 124 80483	47µF 20% 6,3V
2867	4822 122 33496	100nF 10% 63V
2868	5322 122 34123	1nF 10% 50V
2869	5322 122 34123	1nF 10% 50V
2876	5322 122 34123	1nF 10% 50V
2877	5322 122 34123	1nF 10% 50V
2878	5322 122 32531	100pF 5% 50V
2879	5322 122 32531	100pF 5% 50V
2881	4822 122 33496	100nF 10% 63V
2883	4822 122 33064	330nF 80% 25V
2888	4822 122 33177	10nF 20% 50V
2889	4822 124 40248	10µF 20% 63V
2890	4822 122 33575	220pF 5%NPO 50V
2891	4822 122 33496	100nF 10% 63V
2892	4822 124 11423	4,7µF 20%
2893	5322 122 32531	100pF 5% 50V
2894	5322 122 32531	100pF 5% 50V
2895	5322 122 32531	100pF 5% 50V
2897	5322 122 32838	82nF 10% 63V

RESISTORS

3751	4822 051 20331	330Ω 5% 0,1W
3752	4822 051 20221	220Ω 5% 0,1W
3754	4822 051 20105	1M 5% 0,1W
3755	4822 051 20103	10k 5% 0,1W
3760	4822 116 52296	6k8 5% 0,5W
3761	4822 116 52283	4k7 5% 0,5W
3762	4822 051 20821	820Ω 5% 0,1W
3763	4822 051 20821	820Ω 5% 0,1W
3764	4822 051 20821	820Ω 5% 0,1W
3767	4822 050 11002	1k 1% 0,4W

3770	4822 050 11002	1k 1% 0.4W
3785	4822 051 20103	10k 5% 0.1W
3786	4822 051 20101	100Ω 5% 0,1W
3790	4822 051 20103	10k 5% 0.1W
3791	4822 051 20103	10k 5% 0.1W
3792	4822 051 20103	10k 5% 0,1W
3793	4822 051 20103	10k 5% 0,1W
3801	4822 116 52224	470Ω 5% 0,5W
3802	4822 051 10102	1k 2% 0.25W
3803	4822 051 20335	3M3 5% 0.1W
3804	4822 051 20682	6k8 5% 0.1W
3805	4822 051 20223	22k 5% 0.1W
3806	4822 051 20103	10k 5% 0,1W
3807	4822 051 20103	10k 5% 0,1W
3808	4822 051 20473	47k 5% 0.1W
3809	4822 051 20332	3k3 5% 0.1W
3810	4822 051 20332	3k3 5% 0.1W
3811	4822 051 20223	22k 5% 0.1W
3812	4822 051 20332	3k3 5% 0,1W
3813	4822 051 20332	3k3 5% 0,1W
3814	4822 051 20332	3k3 5% 0,1W
3815	4822 050 11002	1k 1% 0,4W
3818	4822 116 52233	10k 5% 0,5W
3820	4822 050 11002	1k 1% 0,4W
3821	4822 051 20124	120k 5% 0,1W
3822	4822 051 20563	56k 5% 0,1W
3823	4822 051 20331	330Ω 5% 0.1W
3824	4822 051 20124	120k 5% 0,1W
3825	4822 116 52233	10k 5% 0,5W
3826	4822 116 52233	10k 5% 0,5W
3827	4822 116 52233	10k 5% 0,5W
3828	4822 116 52233	10k 5% 0,5W
3829	4822 116 52233	10k 5% 0,5W
3830	4822 116 52233	10k 5% 0,5W
3831	4822 051 20223	22k 5% 0,1W
3832	4822 116 52175	100Ω 5% 0,5W
3833	4822 116 52233	10k 5% 0,5W
3834	4822 051 20229	22Ω 5% 0.1W
3835	4822 116 52264	27k 5% 0,5W
3836	4822 116 52207	1k2 5% 0,5W
3837	4822 116 52296	6k8 5% 0,5W
3838	4822 116 52257	22k 5% 0,5W
3839	4822 116 52207	1k2 5% 0,5W
3840	4822 116 52296	6k8 5% 0,5W
3841	4822 116 52297	68k 5% 0,5W
3842	4822 051 20182	1k8 5% 0,1W
3843	4822 116 52277	39k 5% 0,5W
3844	4822 050 11002	1k 1% 0,4W
3845	4822 116 52277	39k 5% 0,5W
3846	4822 050 11002	1k 1% 0,4W
3847	4822 116 40227▲	4Ω6 25% 12V
3848	4822 050 11002	1k 1% 0,4W
3849	4822 052 10338▲	3Ω3 5% 0,33W
3850	4822 050 11002	1k 1% 0,4W
3851	4822 116 52264	27k 5% 0,5W
3852	4822 050 11002	1k 1% 0,4W
3853	4822 116 52296	6k8 5% 0,5W
3854	4822 051 20103	10k 5% 0,1W
3855	4822 051 20224	220k 5% 0.1W
3856	4822 051 20223	22k 5% 0,1W
3857	4822 116 52215	220Ω 5% 0,5W
3858	4822 116 52215	220Ω 5% 0.5W
3860	4822 116 52175	100Ω 5% 0,5W
3862	4822 051 20105	1M 5% 0,1W
3863	4822 051 10102	1k 2% 0,25W
3864	4822 051 10102	1k 2% 0,25W
3865	4822 051 10102	1k 2% 0.25W
3866	4822 051 20331	330Ω 5% 0,1W
3867	4822 051 20101	100Ω 5% 0.1W
3868	4822 051 20101	100Ω 5% 0.1W
3871	4822 116 52186	22Ω 5% 0,5W
3876	4822 116 52284	47k 5% 0,5W
3877	4822 116 52284	47k 5% 0,5W
3880	4822 050 11002	1k 1% 0,4W
3881	4822 050 11002	1k 1% 0,4W
3884	4822 051 20479	47Ω 5% 0,1W
3885	4822 051 20222	2k2 5% 0,1W
3886	4822 116 52226	560Ω 5% 0,5W
3887	4822 051 20473	47k 5% 0,1W
3888	4822 051 20569	56Ω 5% 0.1W
3889	4822 116 52233	10k 5% 0,5W
3890	4822 051 10102	1k 2% 0,25W
3891	4822 116 52186	22Ω 5% 0,5W
3892	4822 051 20103	10k 5% 0,1W
3893	4822 051 20103	10k 5% 0,1W
3894	4822 051 20103	10k 5% 0,1W
3895	4822 051 20103	10k 5% 0,1W
3896	4822 051 20103	10k 5% 0.1W
3899	4822 051 20103	10k 5% 0,1W
4801	4822 051 10008	0Ω 5% 0,25W
4802	4822 051 10008	0Ω 5% 0.25W
4803	4822 051 10008	0Ω 5% 0.25W
4805	4822 051 10008	0Ω 5% 0.25W
4806	4822 051 10008	0Ω 5% 0,25W
4807	4822 051 10008	0Ω 5% 0,25W
4808	4822 051 10008	0Ω 5% 0.25W
4809	4822 051 10008	0Ω 5% 0,25W
4810	4822 051 10008	0Ω 5% 0.25W
4811	4822 051 10008	0Ω 5% 0,25W
4812	4822 051 10008	0Ω 5% 0.25W
4813	4822 051 10008	0Ω 5% 0.25W
4814	4822 051 10008	0Ω 5% 0.25W
4815	4822 051 10008	0Ω 5% 0,25W
4816	4822 051 10008	0Ω 5% 0,25W
4820	4822 051 10008	0Ω 5% 0,25W
4850	4822 051 10008	0Ω 5% 0,25W
4851	4822 051 10008	0Ω 5% 0,25W
4853	4822 051 10008	0Ω 5% 0,25W

COILS

5860	4822 242 81151	LN-G102-68(TPR9)
5885	4822 156 31058	100µH
5890	4822 242 72527	CST 4MHz W-TF01

DIODES

6857	4822 130 30621	1N4148
6881	4822 130 31981	BZX79-C3V9
6883	4822 130 31981	BZX79-C3V9

TRANSISTORS & IC's

7800	5322 209 11517	PC74HCU04T
7820	4822 130 41344	BC337-40
7850	4822 209 31064	TDA1301T/N1
7851	4822 209 32852	TDA7073A/N2
7852	4822 209 32852	TDA7073A/N2
7855	4822 209 31519	TDA7072A
7856	5322 130 60123	BC807-40
7860	4822 209 33339	SAA7345GP/M5
7870	4822 209 33252	TDA1549T/N1
7881	5322 130 41983	BC858B
7883	4822 130 44197	BC558B
7884	4822 130 41344	BC337-40
7885	4822 130 41344	BC337-40
7886	5322 209 86518▲	7805CT
7890	4822 209 33337	68HC05C8FB

TAPE DECK

MISCELLANEOUS

100	4822 691 20928	T.DECK ASSY CWA424RR

CAPACITORS

2650	4822 124 40248	10µF 20% 63V
2651	4822 124 40248	10µF 20% 63V
2652	4822 124 40242	1µF 20% 63V
2653	4822 124 40242	1µF 20% 63V
2654	4822 122 33891	3,3nF 10% 63V
2655	4822 122 33891	3,3nF 10% 63V
2656	5322 122 32452	47pF 5% 63V
2657	5322 122 32452	47pF 5% 63V
2658	5322 122 32452	47pF 5% 63V
2659	5322 122 32452	47pF 5% 63V
2660	4822 124 40244	2,2µF 20% 63V
2661	4822 124 40244	2,2µF 20% 63V
2662	4822 122 32999	2,2N 5% NPO
2663	4822 122 32999	2,2N 5% NPO
2664	4822 122 32999	2,2N 5% NPO
2665	4822 122 32999	2,2N 5% NPO
2666	5322 122 32452	47pF 5% 63V
2667	5322 122 32452	47pF 5% 63V
2668	4822 121 51412	560nF 5% 63V
2669	4822 121 51412	560nF 5% 63V
2670	5322 121 42661	330nF 5% 63V
2671	5322 121 42661	330nF 5% 63V
2672	4822 124 40248	10µF 20% 63V
2673	4822 124 41551	100µF 20% 25V
2674	4822 122 33496	100nF 10% 63V
2675	4822 122 33496	100nF 10% 63V
2676	5322 122 32531	100pF 5% 50V
2677	5322 122 32531	100pF 5% 50V
2678	4822 122 33515	82pF 5% 63V
2679	4822 122 33515	82pF 5% 63V
2680	4822 122 33575	220pF 5%NPO 50V
2681	4822 122 33575	220pF 5%NPO 50V
2682	4822 124 40242	1µF 20% 63V
2683	4822 124 40242	1µF 20% 63V
2684	5322 122 32452	47pF 5% 63V
2685	5322 122 32452	47pF 5% 63V
2686	5322 122 32659	33pF 5% 50V
2687	5322 122 32659	33pF 5% 50V
2688	4822 124 41525	100µF 20% 25V
2692	4822 124 40242	1µF 20% 63V
2693	4822 124 40242	1µF 20% 63V
2700	4822 122 33172	390pF 5% 50V
2701	4822 122 33172	390pF 5% 50V

2702	4822 122 33173	560pF 10% 50V
2703	4822 122 33173	560pF 10% 50V
2704	4822 122 33216	270pF 5% 50V
2705	4822 122 33216	270pF 5% 50V
2706	5322 122 34099	470pF 10% 63V
2707	5322 122 34099	470pF 10% 63V
2708	4822 124 41525	100µF 20% 25V
2709	4822 124 41525	100µF 20% 25V
2710	4822 122 33128	15nF 10% 63V
2711	4822 122 33128	15nF 10% 63V
2712	5322 122 34123	1nF 10% 50V
2713	5322 122 34123	1nF 10% 50V
2714	4822 124 40248	10µF 20% 63V
2715	4822 124 40248	10µF 20% 63V
2716	4822 124 41525	100µF 20% 25V
2717	4822 124 22263	220µF 20% 25V
2718	4822 124 40248	10µF 20% 63V
2730	4822 122 33515	82pF 5% 63V
2731	4822 122 33515	82pF 5% 63V
2732	4822 122 33806	820pF 10% 63V
2733	4822 122 33806	820pF 10% 63V
2734	5322 122 32654	22nF 10% 63V
2735	5322 122 32654	22nF 10% 63V
2736	4822 122 33177	10nF 20% 50V
2737	4822 122 33177	10nF 20% 50V
2738	4822 124 40242	1µF 20% 63V
2739	4822 124 40242	1µF 20% 63V
2740	4822 124 40246	4,7µF 20% 63V
2741	4822 124 40246	4,7µF 20% 63V
2742	4822 124 40242	1µF 20% 63V
2743	4822 124 40242	1µF 20% 63V
2744	5322 122 34123	1nF 10% 50V
2745	5322 122 34123	1nF 10% 50V
2746	4822 121 51252	470nF 5% 63V
2747	4822 121 51252	470nF 5% 63V
2748	4822 124 40248	10µF 20% 63V
2749	4822 124 40248	10µF 20% 63V
2750	4822 124 40433	47µF 20% 25V
2751	4822 124 40242	1µF 20% 63V
2752	4822 122 32927	220nF +80-20% 50V
2753	5322 126 10223	4,7nF 10% 63V
2754	5322 126 10223	4,7nF 10% 63V
2755	4822 124 41525	100µF 20% 25V
2756	4822 124 40246	4,7µF 20% 63V
2757	4822 124 22263	220µF 20% 25V
2760	5322 122 32659	33pF 5% 50V
2761	5322 122 32659	33pF 5% 50V
2762	5322 121 42975	15nF 5% 250V
2764	5322 126 10223	4,7nF 10% 63V
2765	4822 122 33177	10nF 20% 50V
2766	4822 124 40246	4,7µF 20% 63V
2768	4822 124 41525	100µF 20% 25V
2782	4822 122 33342	33N 10%
2791	5322 122 34123	1nF 10% 50V

2792	5322 22 32531	100pF 5% 50V
2793	5322 122 32531	100pF 5% 50V
2794	5322 122 32531	100pF 5% 50V
2795	5322 122 32531	100pF 5% 50V
2796	5322 122 32654	22nF 10% 63V
2797	4822 124 40242	1µF 20% 63V
2799	4822 124 41584	100µF 20% 10V
2782	4822 122 33342	33nF 10% 63V
2787	4822 122 33342	33nF 10% 63V
2800	4822 124 41525	100µF 20% 25V
2801	5322 122 32531	100pF 5% 50V
2802	5322 122 32531	100pF 5% 50V
2803	5322 122 32531	100pF 5% 50V
2808	4822 124 40244	2,2µF 20% 63V
2810	5322 122 34123	1nF 10% 50V
2811	5322 122 34123	1nF 10% 50V

RESISTORS

3650	4822 051 20104	100k 5% 0,1W
3651	4822 051 20104	100k 5% 0,1W
3652	4822 100 11771	20k 30%lin 0,1W
3653	4822 100 11771	20k 30%lin 0,1W
3654	4822 100 11771	20k 30%lin 0,1W
3655	4822 100 11771	20k 30%lin 0,1W
3656	4822 051 10102	1k 2% 0,25W
3657	4822 051 10102	1k 2% 0,25W
3658	4822 050 11002	1k 1% 0,4W
3659	4822 050 11002	1k 1% 0,4W
3660	4822 050 11002	1k 1% 0,4W
3661	4822 050 11002	1k 1% 0,4W
3662	4822 051 20562	5k6 5% 0,1W
3663	4822 051 20562	5k6 5% 0,1W
3664	4822 117 11139	1k5 1% 0,1W
3665	4822 117 11139	1k5 1% 0,1W
3666	4822 116 52257	22k 5% 0,5W
3667	4822 116 52257	22k 5% 0,5W
3668	4822 117 10507	24k 1% 0.1W
3669	4822 117 10507	24k 1% 0.1W
3670	4822 051 20561	560Ω 5% 0,1W
3671	4822 051 20561	560Ω 5% 0,1W
3672	4822 050 11002	1k 1% 0,4W
3673	4822 051 20273	27k 5% 0,1W
3674	4822 052 10478▲	4Ω7 5% 0,33W
3675	4822 117 11139	1k5 1% 0,1W
3676	4822 117 10833	10k 1% 0,1W
3677	4822 117 10833	10k 1% 0,1W
3678	4822 051 20474	470k 5% 0,1W
3679	4822 051 20474	470k 5% 0,1W
3680	4822 051 20821	820Ω 5% 0,1W
3681	4822 051 20821	820Ω 5% 0,1W
3682	4822 051 20471	470Ω 5% 0,1W
3688	4822 051 20332	3k3 5% 0,1W

3689	4822 051 20332	3k3 5% 0,1W
3694	4822 051 20223	22k 5% 0,1W
3695	4822 051 20223	22k 5% 0,1W
3696	4822 051 20223	22k 5% 0,1W
3697	4822 051 20223	22k 5% 0,1W
3698	4822 051 20153	15k 5% 0,1W
3700	4822 116 52224	470Ω 5% 0,5W
3701	4822 116 52224	470Ω 5% 0,5W
3702	4822 051 20471	470Ω 5% 0,1W
3703	4822 116 52224	470Ω 5% 0,5W
3704	4822 051 20154	150k 5% 0.1W
3705	4822 051 20154	150k 5% 0.1W
3706	4822 051 20479	47Ω 5% 0,1W
3707	4822 051 20479	47Ω 5% 0,1W
3708	4822 116 52233	10k 5% 0.5W
3709	4822 051 20103	10k 5% 0,1W
3710	4822 116 52289	5k6 5% 0.5W
3711	4822 051 20562	5k6 5% 0,1W
3712	4822 116 52303	8k2 5% 0.5W
3713	4822 051 20822	8k2 5% 0,1W
3714	4822 116 52283	4k7 5% 0,5W
3715	4822 051 20472	4k7 5% 0,1W
3720	4822 051 20008	0Ω JUMP. (0805)
3721	4822 051 20008	0Ω JUMP. (0805)
3722	4822 116 52224	470Ω 5% 0,5W
3723	4822 116 52224	470Ω 5% 0,5W
3724	4822 116 52245	150k 5% 0,5W
3730	4822 116 52233	10k 5% 0,5W
3731	4822 116 52233	10k 5% 0,5W
3732	4822 116 52175	100Ω 5% 0.5W
3733	4822 116 52175	100Ω 5% 0,5W
3734	4822 116 52284	47k 5% 0,5W
3735	4822 116 52284	47k 5% 0.5W
3736	4822 116 52233	10k 5% 0,5W
3737	4822 116 52233	10k 5% 0,5W
3738	4822 100 11771	20k 30%lin 0,1W
3739	4822 100 11771	20k 30%lin 0,1W
3740	4822 051 20562	5k6 5% 0,1W
3741	4822 051 20562	5k6 5% 0,1W
3742	4822 051 20223	22k 5% 0,1W
3743	4822 051 20223	22k 5% 0,1W
3744	4822 051 20153	15k 5% 0,1W
3745	4822 051 20104	100k 5% 0,1W
3746	4822 051 10102	1k 2% 0,25W
3747	4822 051 10102	1k 2% 0.25W
3748	4822 116 52271	33k 5% 0,5W
3749	4822 116 52219	330Ω 5% 0,5W
3760	4822 051 20109	10Ω 5% 0,1W
3761	4822 051 20109	10Ω 5% 0,1W
3762	4822 100 11163	100k 30%LIN 0,1W
3763	4822 100 11163	100k 30%LIN 0.1W
3764	4822 051 20339	33Ω 5% 0,1W
3765	4822 051 20682	6k8 5% 0,1W
3766	4822 051 20159	15Ω 5% 0,1W

3767	4822 051 20223	22k 5% 0,1W
3768	4822 051 10102	1k 2% 0,25W
3769	4822 117 10833	10k 1% 0,1W
3770	4822 051 20392	3k9 5% 0,1W
3771	4822 051 20221	220Ω 5% 0,1W
3772	4822 117 10833	10k 1% 0,1W
3773	4822 052 10478⚠	4Ω7 5% 0,33W
3774	4822 051 20223	22k 5% 0,1W
3775	4822 051 20222	2k2 5% 0,1W
3776	4822 051 20472	4k7 5% 0,1W
3777	4822 051 20103	10k 5% 0,1W
3780	4822 051 20822	8k2 5% 0,1W
3781	4822 116 52296	6k8 5% 0,5W
3782	4822 100 11319	4k7 30%lin 0,1W
3783	4822 100 11319	4k7 30%lin 0,1W
3784	4822 116 52283	4k7 5% 0,5W
3785	4822 051 10102	1k 2% 0,25W
3786	4822 051 10102	1k 2% 0,25W
3787	4822 051 10102	1k 2% 0,25W
3788	4822 051 20104	100k 5% 0,1W
3789	4822 051 20104	100k 5% 0,1W
3790	4822 051 20104	100k 5% 0,1W
3791	4822 116 52284	47k 5% 0,5W
3792	4822 116 52284	47k 5% 0,5W
3793	4822 116 52284	47k 5% 0,5W
3794	4822 051 20183	18k 5% 0,1W
3795	4822 051 20183	18k 5% 0,1W
3796	4822 050 11002	1k 1% 0,4W
3797	4822 050 11002	1k 1% 0,4W
3798	4822 116 52175	100Ω 5% 0,5W
3799	4822 050 11002	1k 1% 0,4W
3800	4822 050 11002	1k 1% 0,4W
3801	4822 050 11002	1k 1% 0,4W
3802	4822 050 11002	1k 1% 0,4W
3803	4822 116 52175	100Ω 5% 0,5W
3804	4822 116 52215	220Ω 5% 0,5W
3805	4822 051 10102	1k 2% 0,25W
3806	4822 117 10833	10k 1% 0,1 W
3807	4822 051 20472	4k7 5% 0,1W
3808	4822 117 10833	10k 1% 0,1 W
3809	4822 117 10833	10k 1% 0,1 W
3810	4822 117 10833	10k 1% 0,1 W
3811	4822 051 20472	4k7 5% 0,1W
3812	4822 051 20392	3k9 5% 0,1W
3813	4822 117 10833	10k 1% 0,1W
3814	4822 051 20105	1M 5% 0,1W
3816	4822 051 20223	22k 5% 0,1W
3817	4822 051 20223	22k 5% 0,1W
3818	4822 051 20223	22k 5% 0,1W
3819	4822 051 20223	22k 5% 0,1W
3820	4822 051 20223	22k 5% 0,1W
3822	4822 050 11002	1k 1% 0,4W
3823	4822 050 11002	1k 1% 0,4W
3824	4822 050 11002	1k 1% 0,4W

3825	4822 050 11002	1k 1% 0,4W
3826	4822 050 11002	1k 1% 0,4W
3827	4822 117 10834	47k 1% 0,1W
3828	4822 117 10833	10k 1% 0,1W
3829	4822 051 10102	1k 2% 0,25W
3830	4822 051 10102	1k 2% 0,25W
3831	4822 051 10102	1k 2% 0,25W
3833	4822 117 10833	10k 1% 0,1W
3834	4822 117 10833	10k 1% 0,1W
3835	4822 117 10833	10k 1% 0,1W
3836	4822 051 10102	1k 2% 0,25W
3837	4822 116 52233	10k 5% 0,5W
3838	4822 117 10833	10k 1% 0,1W
3839	4822 052 10159▲	15Ω 5% 0,33W
3840	4822 116 52233	10k 5% 0,5W
3841	4822 116 52283	4k7 5% 0,5W
3842	4822 051 20223	22k 5% 0,1W
3843	4822 051 20223	22k 5% 0,1W
3844	4822 051 20223	22k 5% 0,1W
3845	4822 050 11002	1k 1% 0,4W
3846	4822 050 11002	1k 1% 0,4W
3847	4822 050 11002	1k 1% 0,4W
3856	4822 116 52233	10k 5% 0,5W
3858	4822 051 20474	470k 5% 0,1W
3859	4822 117 10833	10k 1% 0,1W
3860	4822 051 20223	22k 5% 0,1W
3861	4822 051 20223	22k 5% 0,1W
3864	4822 051 20008	0Ω JUMP. (0805)
3865	4822 051 20008	0Ω JUMP. (0805)

COILS

5650	4822 156 21725	MPX FILTER LXD-210
5651	4822 156 21725	MPX FILTER LXD-210
5652	4822 156 20811	10ΩB/181LY-363J TOKO
5653	4822 156 20811	10ΩB/181LY-363J TOKO
5730	4822 156 20811	10ΩB/181LY-363J TOKO
5731	4822 156 20811	10ΩB/181LY-363J TOKO
5760	4822 156 20946	OSC COIL 100kHz
5770	4822 157 53941	COIL 100μH
5780	4822 242 72527	CST 4 MHz
5790	4822 157 53941	COIL 100μH

DIODES

6650	4822 130 34233	BZX79-C5V1
6760	4822 130 61219	BZX79-C10
6780	5322 130 30684	1N4002GP
6781	5322 130 30684	1N4002
6782	4822 130 30621	1N4148
6783	4822 130 30621	1N4148
6786	4822 130 30621	1N4148
6787	4822 130 30621	1N4148

TRANSISTORS & IC's

7650	4822 209 32919	HEF4952BT
7651	4822 209 31134	CXA1331S
7652	5322 130 42136	BC848C
7653	5322 130 42136	BC848C
7654	5322 130 42136	BC848C
7655	5322 130 42136	BC848C
7656	5322 130 42136	BC848C
7657	5322 130 42136	BC848C
7700	4822 209 32919	HEF4952BT
7701	4822 209 61667	UPC1330HA
7702	4822 209 32918	AN7318S
7703	5322 209 11102	HEF4052BT
7730	4822 209 31505	CXA1298AP
7758	5322 130 42136	BC848C
7759	4822 130 42513	BC858C
7760	5322 130 44779	BC338-40
7761	5322 130 44779	BC338-40
7762	4822 130 44196	BC548C
7763	4822 130 44196	BC548C
7764	4822 130 42682	DTA144ΩS
7765	4822 130 60588	DTC114ΩS
7780	4822 130 41715	BC328-40
7781	4822 130 41715	BC328-40
7782	4822 130 41715	BC328-40
7783	5322 130 42136	BC848C
7784	5322 130 42136	BC848C
7785	5322 130 42136	BC848C
7786	4822 130 42513	BC858C
7787	5322 130 42136	BC848C
7788	5322 130 42136	BC848C
7789	5322 130 42136	BC848C
7790	5322 130 42136	BC848C
7791	5322 130 42136	BC848C
7792	4822 209 72042	78L05ACP
7793	4822 209 12612	8HC05C4P